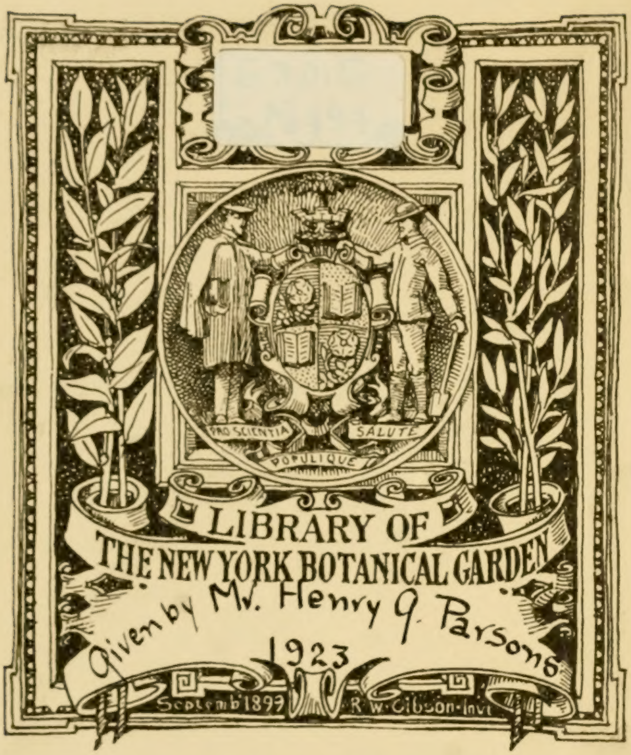
SHOUT
SHARE
IT


PRO SCIENTIA
SALUTE
POPULIQUE
Septemb 1897
R. W. Gibson Invt

LIBRARY OF
THE NEW YORK BOTANICAL GARDEN
Given by Mr. Henry G. Parsons
1923

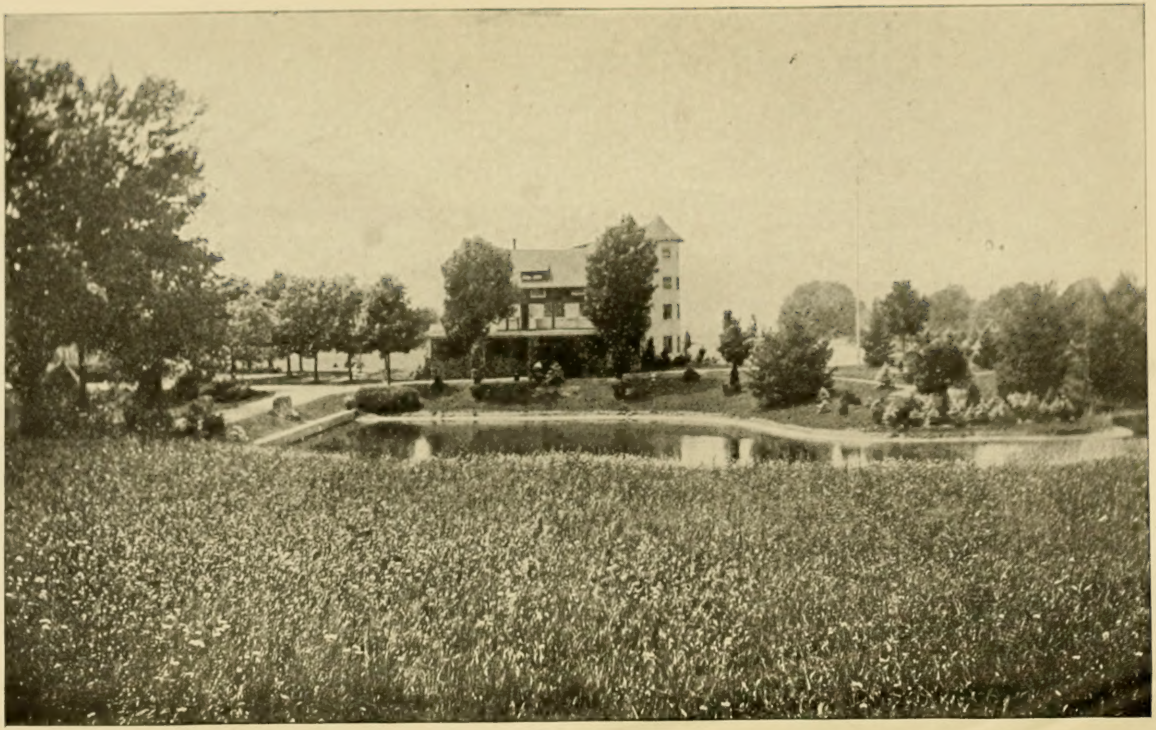


Fig. 1.—A Farm Home in the Hill Country of New York State

STATE OF NEW YORK
DEPARTMENT OF FARMS AND MARKETS
DIVISION OF AGRICULTURE
GEORGE E. HOGUE, Commissioner

Bulletin 133

Agricultural Manual of New York State, Arranged by Counties

Including Maps, Historical Data, Facts Relating to Production and Marketing and General Items of Interest

LIBRARY
NEW YORK
BOTANICAL
GARDEN

Compiled by
EDITH VAN WAGNER
Editorial Bureau

X13
.U7995
#133

CONTENTS

	PAGE
Foreword	13
Introduction	15
Topography	17
Geology and Soil Formation, E. van Alstyne	20
The Climate of New York State, W. M. Wilson and R. A. Mordoff	28
Points of Scenic Interest	51
Early History	53
Present-Day Agriculture	66
Minerals and Mining in New York State, D. H. Newland	80
Commercial Facilities	84
Educational Facilities	88
Albany County	92
Allegany County	107
Bronx County	121
Broome County	122
Cattaraugus County	134
Cayuga County	151
Chautauqua County	166
Chemung County	181
Chenango County	192
Clinton County	204
Columbia County	217
Cortland County	232
Delaware County	244
Dutchess County	258
Erie County	272
Essex County	287
Franklin County	303
Fulton County	315
Genesee County	325
Greene County	335
Hamilton County	346
Herkimer County	354
Jefferson County	368
Kings County	382
Lewis County	383
Livingston County	398
Madison County	410
Monroe County	423
Montgomery County	435
Nassau County	446
New York County	454
Niagara County	456

PAGE
Oneida County 469
Onondaga County 487
Ontario County 502
Orange County 515
Orleans County 531
Oswego County 542
Otsego County 555
Putnam County 569
Queens County 577
Rensselaer County 579
Richmond County 591
Rockland County 592
St. Lawrence County 599
Saratoga County 617
Schenectady County 632
Schoharie County 640
Schuyler County 652
Seneca County 661
Steuben County 672
Suffolk County 688
Sullivan County 700
Tioga County 711
Tompkins County 721
Ulster County 732
Warren County 745
Washington County 757
Wayne County 773
Westchester County 786
Wyoming County 800
Yates County 812
Population of New York State 822
Agricultural Statistics of 1920 823
Index 839

LIST OF ILLUSTRATIONS

PAGE
Fig. 1. A farm home in the hill country of New York State..Frontispiece
Fig. 2. New York State presents a varied surface................ 18
Fig. 3. Soils of New York State................................ 28
Fig. 4. Climatic divisions of New York........................ 33
Fig. 5. Average January temperature........................... 35
Fig. 6. Average April temperature.............................. 35
Fig. 7. Average July temperature.............................. 36
Fig. 8. Average October temperature........................... 36
Fig. 9. Absolute minimum temperature.......................... 37
Fig. 10. Average date of last killing frost in spring................ 38
Fig. 11. Average date of first killing frost in fall................. 38
Fig. 12. Average number of days between the last frost in spring and the first in fall.................................. 39
Fig. 13. Normal annual precipitation........................... 41
Fig. 14. Average winter precipitation (December, January, February) 43
Fig. 15. Average spring precipitation (March, April, May)........ 43
Fig. 16. Average summer precipitation (June, July, August)...... 45
Fig. 17. Average fall precipitation (September, October, November). 45
Fig. 18. Seasonal variation in length of day with total number of hours of possible sunshine in each month.............. 49
Fig. 19. View on lower Au Sable lake, showing Colvin mountain.... 51
Fig. 20. A typical Adirondack forest, showing Sawtooth range and Santanoni mountain 51
Fig. 21. Alfalfa grows readily in New York State................. 68
Fig. 22. The oat crop of New York State leads in acreage among the grains 69
Fig. 23. New York has excellent facilities for communication and transportation 84
Fig. 24. A poultry project..................................... 90
Fig. 25. Articles constructed in farm shop of high school.......... 90
Fig. 26. Farm land near Berne.................................. 96
Fig. 27. Cattle on bank of Normans kill, near Albany............. 97
Fig. 28. Chart showing relative acreage of crops in Albany county.. 106
Fig. 29. View in valley west of Andover, Allegany county......... 111
Fig. 30. Farm land near Belvidere.............................. 111
Fig. 31. Chart showing relative acreage of crops in Allegany county. 120
Fig. 32. Cows at pasture in town of Chenango, Broome county..... 126
Fig. 33. Hay crop in town of Union, Broome county............... 126
Fig. 34. Chart showing relative acreage of crops in Broome county.. 133
Fig. 35. A progressive dairy farm at Salamanca, Cattaraugus county. 136
Fig. 36. Holsteins on Fancher farm, Salamanca.................... 137
Fig. 37. Chart showing relative acreage of crops in Cattaraugus county 150

PAGE
Fig. 38. Herd of Cayuga county Guernseys...................... 156
Fig. 39. Duroc Jersey pigs on farm of B. B. Andrews, near Weedsport 157
Fig. 40. Chart showing relative acreage of crops in Cayuga county.. 165
Fig. 41. Vineyards near Silver Creek, on Ridge road, Chautauqua county 172
Fig. 42. Haying alfalfa in Chautauqua county.................... 172
Fig. 43. Chart showing relative acreage of crops in Chautauqua county 180
Fig. 44. Chemung river and valley — Elmira in the distance....... 184
Fig. 45. Progressive farming in Chemung county.................. 185
Fig. 46. Chart showing relative acreage of crops in Chemung county. 191
Fig. 47. Farm lands in Chenango valley.......................... 196
Fig. 48. Chart showing relative acreage of crops in Chenango county. 203
Fig. 49. Harvesting wheat on Heart's Delight farm, Clinton county.. 210
Fig. 50. A corn crop in Clinton county.......................... 210
Fig. 51. Chart showing relative acreage of crops in Clinton county.. 216
Fig. 52. Farm view in town of Chatham, Columbia county.......... 224
Fig. 53. Birdseye view of young Kieffer pear orchard.............. 225
Fig. 54. Chart showing relative acreage of crops in Columbia county. 231
Fig. 55. A flock of Cortland county sheep........................ 236
Fig. 56. Shearing the flock...................................... 236
Fig. 57. Chart showing relative acreage of crops in Cortland county. 243
Fig. 58. A group of Meridale heifers.......................... 250
Fig. 59. Barn and dairy building, State School of Agriculture and Domestic Science. Delhi................................ 251
Fig. 60. Chart showing relative acreage of crops in Delaware county. 257
Fig. 61. View on farm of J. G. Webb, Clinton Corners............. 264
Fig. 62. Gathering the crop...................................... 264
Fig. 63. Chart showing relative acreage of crops in Dutchess county. 271
Fig. 64. Two-year-old daughters of Rag Apple Korndyke 8th........ 278
Fig. 65. Young stock and orchard at Gowanda State Hospital...... 278
Fig. 66. Chart showing relative acreage of crops in Erie county... 286
Fig. 67. Orchard owned by Fred L. Porter, Crown Point, Essex county 292
Fig. 68. Second cutting of alfalfa on farm of D. W. Crawford, Essex county 292
Fig. 69. Chart showing relative acreage of crops in Essex county.... 302
Fig. 70. Potatoes being inspected for certified seed................ 306
Fig. 71. Farm owned by A. S. Hosley, Tupper Lake, Franklin county 306
Fig. 72. Chart showing relative acreage of crops in Franklin county. 314
Fig. 73. Oats on farm of William H. O'Neill, Johnstown, Fulton county 318
Fig. 74. Canary Paladin Vale.................................... 318
Fig. 75. Chart showing relative acreage of crops in Fulton county.. 324
Fig. 76. Farm view in southeastern Genesee county................ 328
Fig. 77. Chart showing relative acreage of crops in Genesee county.. 334

PAGE
Fig. 78. View from East Windham Mountain road, overlooking town of Durham, Greene county 338
Fig. 79. Potatoes on farm of Ellis Bentley, Windham 338
Fig. 80. Chart showing relative acreage of crops in Greene county . . 345
Fig. 81. Blue Mountain lake 348
Fig. 82. Holsteins owned by W. D. Robens, Cold Brook, Herkimer county 360
Fig. 83. Chart showing relative acreage of crops in Herkimer county. 367
Fig. 84. Farm view near LaFargeville, potatoes in foreground 372
Fig. 85. Farm land near Adams Center, sweet clover in foreground . . 372
Fig. 86. Chart showing relative acreage of crops in Jefferson county. 381
Fig. 87. View over the Black river, Lewis county 388
Fig. 88. Second cutting of alfalfa on farm of N. W. Salmon, Glenfield, Lewis county 388
Fig. 89. Chart showing relative acreage of crops in Lewis county . . . 397
Fig. 90. Celery on muck land 402
Fig. 91. Farm view near Avon 403
Fig. 92. Chart showing relative acreage of crops in Livingston county 409
Fig. 93. Dairy farm near Munnsville, owned by Clark W. Davis 414
Fig. 94. Celery field owned by Hon. Milton DeLano, Canastota 415
Fig. 95. Chart showing relative acreage of crops in Madison county . . 422
Fig. 96. Monroe county stands second in number of swine 428
Fig. 97. Chart showing relative acreage of crops in Monroe county . . 434
Fig. 98. Ten-acre field of buckwheat, town of Florida, Montgomery county 438
Fig. 99. Potato field in the town of Minden, Montgomery county 438
Fig. 100. Chart showing relative acreage of crops in Montgomery county 445
Fig. 101. Potatoes on farm of John Gasser, Hicksville, Nassau county 448
Fig. 102. Potatoes yielding 382 bushels per acre near Hicksville, Nassau county 448
Fig. 103. Chart showing relative acreage of crops in Nassau county . . 453
Fig. 104. Dusting apple trees in Niagara county 460
Fig. 105. Dusting peach trees in Niagara county 460
Fig. 106. Chart showing relative acreage of crops in Niagara county . . 468
Fig. 107. Sheep are becoming important in Oneida county 474
Fig. 108. Picking beans on 300-acre bean farm 475
Fig. 109. Chart showing relative acreage of crops in Oneida county 486
Fig. 110. Fruit orchard of 35,000 trees, town of Onondaga 492
Fig. 111. Cheviot ewes in farm flock 493
Fig. 112. Chart showing relative acreage of crops in Onondaga county 501
Fig. 113. An Ontario county wheat crop 507
Fig. 114. Chart showing relative acreage of crops in Ontario county. 514
Fig. 115. Cold frames on muck land at Middletown containing lettuce and celery 521
Fig. 116. Chart showing relative acreage of crops in Orange county . . 530
Fig. 117. Young Baldwin orchard at Kendall, owned by H. E. Wellman 534

PAGE
Fig. 118. Spraying a forty-acre potato field in Orleans county....... 534
Fig. 119. Chart showing relative acreage of crops in Orleans county.. 541
Fig. 120. Ontario Plain, near Mexico.............................. 546
Fig. 121. Cultivating bean crop in Fulton, Oswego county........... 547
Fig. 122. Chart showing relative acreage of crops in Oswego county.. 554
Fig. 123. Shropshire lambs on farm of F. Ambrose Clark, near Cooperstown 560
Fig. 124. Holsteins in pasture on farm of Henry Bradley, Milford, Otsego county 560
Fig. 125. Chart showing relative acreage of crops in Otsego county.. 568
Fig. 126. Young Holsteins on farm of C. E. Clinton, Putnam Valley, Putnam county 570
Fig. 127. Chart showing relative acreage of crops in Putnam county. 576
Fig. 128. Sheep at pasture in Rensselaer county.................... 584
Fig. 129. Chart showing relative acreage of crops in Rensselaer county 590
Fig. 130. Pickle field, Monsey, Rockland county.................... 593
Fig. 131. Canning factory of Kakiat Food Products Co., Monsey, Rockland county 593
Fig. 132. Chart showing relative acreage of crops in Rockland county. 598
Fig. 133. Cattle on farm of St. Lawrence State Hospital, Ogdensburg. 604
Fig. 134. Chart showing relative acreage of crops in St. Lawrence county 616
Fig. 135. Farm view in Saratoga county............................. 622
Fig. 136. Chart showing relative acreage of crops in Saratoga county. 631
Fig. 137. Farm view in Schenectady county.......................... 633
Fig. 138. Chart showing relative acreage of crops in Schenectady county 639
Fig. 139. Upper end of branch of Schoharie valley.................. 644
Fig. 140. Schoharie valley near Fultonham.......................... 644
Fig. 141. Chart showing relative acreage of crops in Schoharie county. 651
Fig. 142. Peach and plum orchard in the town of Hector........... 654
Fig. 143. Chart showing relative acreage of crops in Schuyler county.. 660
Fig. 144. A Seneca county orchard.................................. 664
Fig. 145. One of the wheat fields of Seneca county................ 665
Fig. 146. Chart showing relative acreage of crops in Seneca county.. 671
Fig. 147. A valley in northwestern Steuben county.................. 676
Fig. 148. Alfalfa on farm near Kanonah............................. 677
Fig. 149. Chart showing relative acreage of crops in Steuben county.. 687
Fig. 150. Many ducks are raised in Suffolk county.................. 692
Fig. 151. Cranberry marsh, Suffolk county.......................... 693
Fig. 152. Chart showing relative acreage of crops in Suffolk county.. 699
Fig. 153. The exercising field, Brookwood farms.................... 704
Fig. 154. Chart showing relative acreage of crops in Sullivan county.. 710
Fig. 155. Susquehanna river and valley............................. 714
Fig. 156. Farm view near Smithboro................................. 715
Fig. 157. Chart showing relative acreage of crops in Tioga county... 720
Fig. 158. Buttermilk Falls, Ithaca................................. 725
Fig. 159. Chart showing relative acreage of crops in Tompkins county 731

PAGE
Fig. 160. Cherry orchard with intercrop of currants................ 736
Fig. 161. Chart showing relative acreage of crops in Ulster county.. 744
Fig. 162. Farm view near Glens Falls........................... 750
Fig. 163. Chart showing relative acreage of crops in Warren county.. 756
Fig. 164. View on Paradise Bay, Lake George, Washington county.... 762
Fig. 165. Chart showing relative acreage of crops in Washington county 772
Fig. 166. View on Hopkins farm, Sodus, Wayne county............ 778
Fig. 167. Harvesting Boston head lettuce........................ 779
Fig. 168. Chart showing relative acreage of crops in Wayne county.. 785
Fig. 169. A herd of Guernseys in Westchester county............... 792
Fig. 170. Scene on Hessian Hill farm............................ 792
Fig. 171. Chart showing relative acreage of crops in Westchester county 799
Fig. 172. Gorge in the Genesee river near Portageville.............. 804
Fig. 173. Statue of Mary Jemison, Letchworth Park, Wyoming county 805
Fig. 174. Chart showing relative acreage of crops in Wyoming county 811
Fig. 175. View on Lake Keuka, showing vineyards on hillsides across lake 816
Fig. 176. Portion of vineyard owned by Hon. Calvin J. Huson, Dresden 817
Fig. 177. Chart showing relative acreage of crops in Yates county.... 821

FOREWORD

Although it is admitted that New York, the Empire State, ranks among the foremost in the Union, it is entirely appropriate to review some of the causes that have warranted her being accorded so prominent a position. This bulletin is published, therefore, in order to bring about a broader knowledge of the State of New York — something of her growth and development, and something of her wonderful resources and possibilities. It is hoped that this book may also prove valuable as a work of reference.

The general scheme of such a publication was conceived by the late Edward van Alstyne, then director of farmers' institutes in the Department of Agriculture, more than two years ago. Under his direction a small beginning was made, and since his death the work has been continued and developed in the Editorial Bureau, although it has frequently been temporarily suspended because of other more immediate demands on the time of those engaged in its compilation.

An inspection of the contents will at once suggest the great number of sources from which the material was derived. Numerous state and county histories and gazetteers have been made available through the aid of the State Library, and to the writers of those volumes we are indebted for no small part of the information here recorded. It would still have been impossible, however, to assure ourselves of a multitude of facts without the assistance that has been so willingly accorded by authorities on the various phases from every section of the state. While it is manifestly impracticable to make personal mention of these individuals, I wish here to record my sincere appreciation of their assistance.

Special acknowledgment is due several farm bureau managers, also Assemblyman D. P. Witter and other members of the Legislature, through whose cooperation much valuable material has been obtained.

Owing to the limited space available in this bulletin, climatological data are necessarily limited to that of one station in each county. Through the kindness of Professor W. M. Wilson, in charge of the Weather Bureau at Ithaca, such figures have been obtained from records on file in his office. In making a selection of stations the object has been not only to include records continuing throughout long periods but also to select the record that most nearly covers conditions generally in the county which it represents.

Monthly temperature extremes are given, not with the expectation that similar temperatures are frequently to be encountered, but as a matter of interest, showing unusual records made during periods of observations taken at various points in the state.

The wide differences in land values as stated in different sections and townships are due to wide differences of conditions, which often occur within a single township. Land values are influenced, not only by the nature and condition of land and buildings, but also by the available means of transportation, including waterways, railroads, and improved or unimproved highways. As a rule, higher values may be observed in farm property near the centers of population, as these furnish ready markets for farm produce. Similar conditions exist in the vicinity of popular summer resorts, while at the same time in some of the more remote sections, where land values are lower, the soil is equally productive and conditions are very favorable for profitable undertakings of various kinds.

In some instances it has been extremely difficult to place average values because of the great number and variety of conditions that must be considered. It is possible, since this bulletin has been under preparation during an extended period of unsettled prices and valuations, that values for neighboring counties in certain sections will have been placed at different times and will, therefore, be estimated on a different basis. This condition should be considered in making comparisons between different sections of the state. Careful inquiry has been made, however, and a consensus of opinion has been sought from those well fitted to judge, in order that the relative values in the various townships of each county may be correctly stated.

A complete list of milk stations, creameries, cheese factories, etc., in the state, or a complete list of agricultural organizations, including names and addresses of officers, may be obtained by addressing this Department.

GEORGE E. HOGUE
Commissioner of Agriculture

INTRODUCTION

Ever since the Iroquois, one of the most powerful Indian tribes of America, roamed at will through the abundant forests of our state, occasionally journeying far beyond its borders in quest of enemies or game, but invariably returning here to enjoy their home life, New York State has held her own peculiar fascination. The climate is healthful and invigorating. The natural scenery of the state presents a wonderful variety of beautiful aspects, including mountains, mountain gorges, lakes, waterfalls, broad plains, and fertile fields.

The soil, which is largely of glacial origin, is noted for its long-continued productiveness. Since the rainfall is generally well distributed, and the growing season of sufficient length, serious crop failure is unusual. In fact, conditions generally favor a remarkably rapid growth of vegetation.

The state is adapted to a great variety of products. The intelligent farming practiced is reflected in the growing of more and better crops, in the breeding of better live stock, and in the increasing number of improved dairy herds. The use of the silo, the increase in the number of orchards, the cultivation of better fruit, and the development of truck and canning crops also indicate the constant progress of agriculture.

The location gives unexcelled advantages, not only for home trade, but for foreign trade as well. Marketing facilities within the state are of the best, with the great number of constant markets whose demands are ever increasing, with the network of railroads reaching every section of the state, and with the numerous trolleys and waterways, together with the many miles of improved highways. Economical and ready means of transportation are offered by the Barge Canal and the Hudson River from the western extremity of the state direct to the greatest seaport in the world.

New York State has a wide variety of valuable minerals, and her forests are by no means the least of her treasured possessions.

New York leads in manufacturing, including clothing, machinery, and wood and metal products. In the number of publications issued and in the quantity printed, New York is equaled by no other state in the Union.

In the common schools and in the higher institutions of learning excellent educational advantages are offered, and every branch of education may be pursued within the state.

To those who wish to establish homes within her borders, New York extends a cordial welcome, and the Division of Agriculture of the State Department of Farms and Markets stands ready to give information along agricultural lines to all those desiring assistance.

The following paragraph, taken from Horne's "History of New York," sets forth in concise terms the importance of New York State:

> New York has long been the first state of the American Union in the number of her people. She is also the wealthiest state, not only the financial center of the nation but also its business center, the chief organizer of new enterprises, the promoter of new inventions. She also ranks first among the states in commerce, and first in manufactures. She was once the richest agricultural state, the main source of the nation's grain and fruit and lumber; and though the vast size of the western states has of late enabled some of them to exceed her total agricultural product, yet her fields and orchards are still famed for their fertility. New York has also, at more than one critical period in our country's history, acted as the leader of the other states both in politics and in war. For all these reasons she has by common consent been given the proud title of "The Empire State."

LOCATION AND EXTENT

New York State is situated in the northeastern part of the United States. Its latitude extends between 40° 29′ 4″ and 45° 0′ 42″ north, and its longitude between 71° 51′ and 79° 47′ 25″ west. The land surface of the state has an area of 47,654 square miles, and the water surface 1,550 square miles, making a total area of 49,204 square miles. Exclusive of Long Island, which runs about seventy miles farther east than the mainland, the state extends approximately 350 miles from east to west and 320 miles from north to south.

TOPOGRAPHY

The principal highlands of the state may be divided into two general regions, namely, the Adirondack section in the northeast and the Allegheny plateau lying in the southern part west of the Hudson valley. The Catskill Mountains rise at the eastern end of the Allegheny plateau. In southeastern New York is a minor highland region cut through by the Hudson River, and including the Highlands, the Palisades, and the Taconic mountains. Another minor highland known as Tug Hill lies just west of the Adirondacks and includes a large part of Lewis County.

Along the eastern border of the state is a long, narrow lowland, the northern part of which is occupied by Lakes Champlain and George, and the southern part by the Hudson valley. Along the St. Lawrence River and Lakes Ontario and Erie is another lowland region. This region is widest south of the eastern end of Lake Ontario, narrowing to a width of only four or five miles in the western end of the state. Connecting the Hudson-Champlain valley with the lake plains is a third lowland, the Mohawk valley. Long Island, which is a part of the Atlantic coastal plain, includes a fourth lowland region.

The highest elevation of the state is Mount Marcy, in Essex County, which reaches a height of 5,344 feet. Mount MacIntyre ranges next, with a height of 5,112 feet. In the northwestern part of Essex County and confined to an area of five or six hundred square miles, are a number of other peaks with an elevation of between four and five thousand feet. These are the loftiest mountains in eastern North America with the exception of the Blue Ridge of North Carolina and the White Mountains of New Hampshire. Throughout the Adirondack section there are many deep valleys with steep slopes, and numerous beautiful lakes. The second highest mountain district in this state is in the northern half of Hamilton County, where many points reach altitudes above 3,500 feet, although none quite reach 4,000 feet.

The north side of the Allegheny plateau ends in a steep slope, or escarpment, which descends to the lake plains. In the center, however, this plateau is penetrated by the valleys of the Finger Lakes, which extend from the lowland region on the north.

From Rochester westward the lowland itself is divided into two plains separated by a bluff or escarpment that can be plainly traced. Over this escarpment the waters of Lake Erie descend to Lake Ontario, forming the falls of Niagara.

The Mohawk valley is a trench 1,000 feet deep, 15 to 20 miles wide, and about 90 miles long. The valley is 445 feet above sea level at Rome, reaching tide level where it joins the Hudson at Troy.

The surface of Long Island is generally level or gently undulating. A ridge 150 to 200 feet high, composed of sand, gravel, and clay, extends east and west across the island north of the center.

The following table shows the area of the state lying at varying altitudes, the location of which may be seen on the accompanying map.

AREAS IN NEW YORK STATE AT DIFFERENT ALTITUDES

ALTITUDE Feet	AREA Square miles
0–100	2.400
100–500	10,900
500–1,000	16,100
1,000–1.500	12,500
1.500–2,000	5,170
2,000–3,000	1,700
3.000–4,000	200
4.000–5,000	200

RIVERS, LAKES, AND WATERFALLS

The streams of the state may be divided into those tributary to the Great Lakes and the St. Lawrence, and those flowing in a general southerly direction. In the first division the principal streams are the Genesee, Oswego, Salmon, Black, Oswegatchie, Grass, Raquette, Chazy, Saranac, and Ausable rivers and their tributaries. The second division includes the Allegheny, which is a part of the Mississippi River system, also the Susquehanna, Delaware, and Hudson River systems.

Several of the little lakes forming reservoirs of the upper Hudson are 2,500 to 3,000 feet above tide. The course of the upper Hudson is frequently interrupted by falls, but at Troy the river becomes an arm of the sea, where the current is affected by the tide. Being navigable for large steamers from New York Bay to Troy, a distance of 150 miles, the river is one of the largest

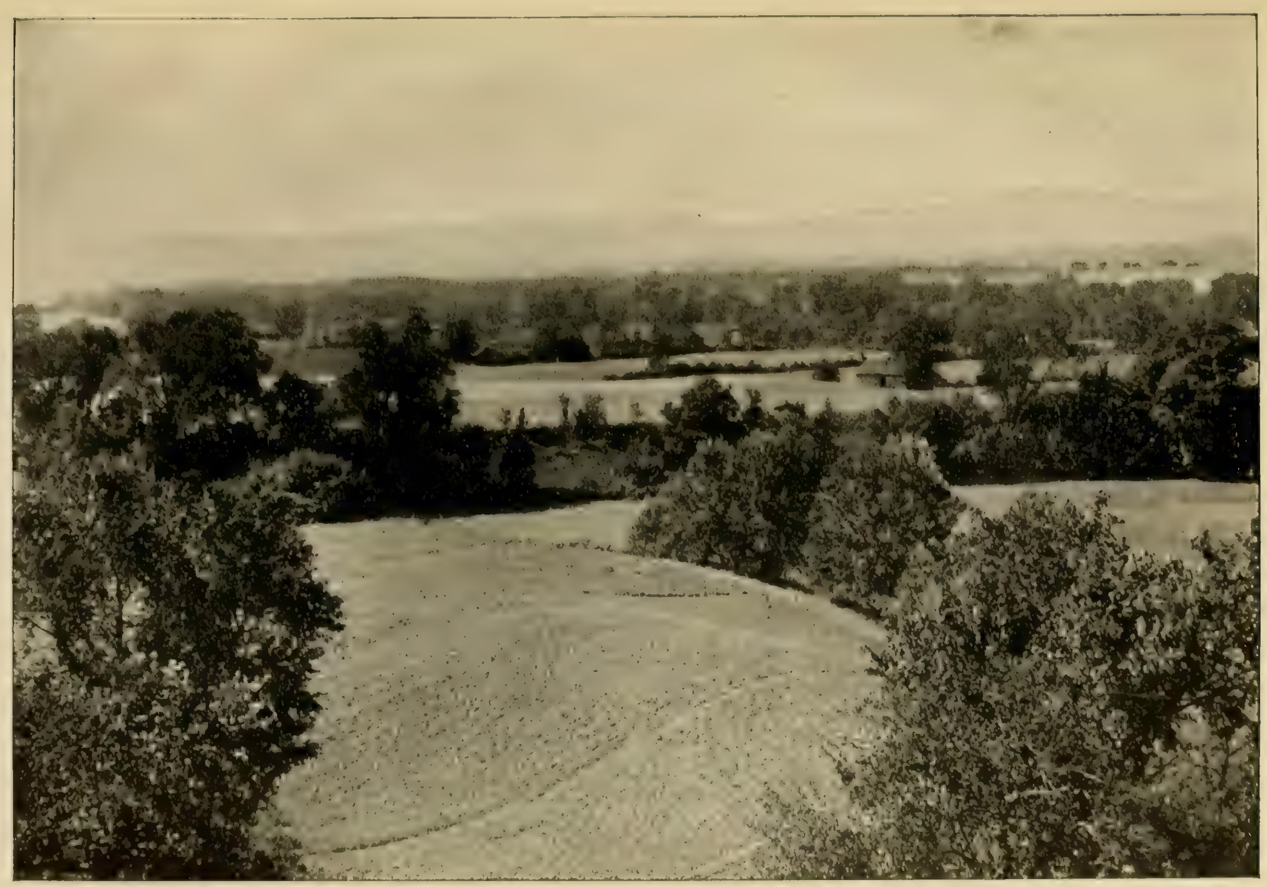


FIG. 2.— NEW YORK STATE PRESENTS A VARIED SURFACE

commercial waterways of the world. Lakes Erie and Ontario, bordering portions of this state, are navigable for large vessels, and hence are also of great commercial importance. The shores of these two lakes, together with those of Lake Champlain, form a water boundary of the state of more than 350 miles. Besides the larger lakes in the Adirondack section and the Finger Lakes, Chautauqua Lake, in the southwestern part of the state, is one of the largest. This lake is well known both because of its beauty and because of the Chautauqua Assembly that meets annually on its shores.

* GEOLOGY AND SOIL FORMATION

It is always wise to start at the beginning; hence, since the foundation of agriculture is the soil, it is well to know something of how it was formed. This takes us back millions of years to the time when "the earth was without form and void," as the rocks amply testify. A subject so vast can be touched only in the briefest manner in a work of this character. With the twofold purpose of laying a wide foundation and impressing the thought of the tremendous forces which have been, and still are, working on the earth, making it a fit habitation for man, the crowning glory of creation, and with the hope that this brief recital of the working forces of nature through the cycles may create an interest that will lead to further study of this most interesting subject, the following outstanding facts are presented without attempt to be scientific.

THE BEGINNING

Ages ago a great sea covered most of the state. The Adirondacks stood out as a great island, doubtless considerably higher than at present.

At a later period the Appalachian Mountains were raised up, which created a barrier extending from the St. Lawrence River to Alabama. All of eastern North America was at that time raised well above sea level; in New York, the exception was about the mouth of the present Hudson River. Later, toward the end of what is known as the "Mesozoic" period, practically all the area of New York State, except the Adirondacks and the Catskills, had been reduced to a plain. Present ridges and valleys were not in existence except potentially in the hidden differences of rock structure. Then came a physical disturbance, the effect of which was to produce a broad dome, sloping eastward, westward, and northward toward the Gulf of St. Lawrence, and southward toward the Gulf of Mexico.

---

* This article is taken from an extensive agricultural work that was being prepared for publication at the time of his death by the late Edward van Alstyne, then director of farmers' institutes in this department.

Following this period, the courses of the rivers were largely determined. The lakes, small and great, were not in existence, but through the basins of what we now know as lakes flowed some of the ancient rivers.

THE GLACIAL PERIOD

The great ice age that followed this period was, geologically speaking, of recent date compared with the periods going before. The Laurentian ice sheet spread to northern New York. The Adirondack Mountains, standing as a barrier, caused the ice to divide, one portion passing southward through the deep Champlain valley, extending into the valley of the Hudson, a branch of which passed into the Mohawk valley, where, not far from Little Falls, it met the ice of the other portion which had passed southwestward through the St. Lawrence valley; a lobe passed into the Ontario basin; another through the Black River valley. The ice sheet pushed southward until the whole state except the southern border of Long Island was buried under the ice, which reached a depth of several thousand feet. The general direction of the glacier was southward to southwestward, as evidenced by the fact that central New York is strewn with boulders transported from the Adirondacks by the ice. Similar boulders are found as far south as Binghamton and well down the Hudson valley. Evidently there were two advances and retreats of the glaciers in New York State. As indicated, the ice was charged with rocks, boulders, and soil. Thus shod, it became a powerful erosive agent, grinding rocks and soil in its path, leveling hills, and carving out valleys. On the other hand, as the ice melted, deposits were made, constituting what is known as "drift," and covering practically all of the state.

Where the ice first remained stationary it built up what are known as "terminal moraines," a range of low, irregular hills. These mark the southernmost limit of the ice sheet, and may be distinctly seen through the whole length of Long Island, also through the southern portion of Cattaraugus County. Further northward, but not so distinct, moraines may be traced from Herkimer through Oriskany Falls, Cortland, Watkins, Bath, Portageville, Dayton, and Jamestown.

Another type of glacial deposit is the "drumlin," or low, rounded mound, in height from 100 to 200 feet. Thousands of these "drumlins" may be seen in western New York between Syracuse and Rochester, as one passes over the New York Central railroad.

FORMATION OF LAKES

Prior to the ice age no lakes existed. Through many of the pre-glacial valleys flowed streams. These valleys were deepened by the glaciers. Some of the material carried by the ice was deposited in the more narrow places, damming up the valleys, thus forming lakes, some of them much larger than at present. As in the case of Lake Ontario, the southern shore of which was the "Ridge," extending through Niagara, Orleans, and Monroe counties, the numerous muck lands in this region are portions of the bed of the old lake. The formation of these lakes, and in some cases their decrease in size and volume of water, or their entire disappearance, accounts for the disappearance of ancient rivers, whose old beds are now farm lands. At other times new rivers were created or the volume and course of existing ones materially changed. To illustrate: one such was called "Rome River," which flowed westward from Little Falls, through Utica and Rome, and into the basin now occupied by Lake Ontario. West Canada Creek was then tributary to this river. The Sacandaga River flowed into the Mohawk, instead of into the Hudson, as now.

Estimates of the duration of the glacial period vary from 500,000 to 1,500,000 years. Southern New York was free from ice when the northern portion was still covered. Estimates vary as to the length of time since the passing of the ice period, the average being about 25,000 years. At the beginning of the glacial period, the region of New York State was much higher than today. This is clearly indicated by the Hudson River channel, which has been definitely traced — a distinct trough in the ocean bottom for 100 miles eastward from Sandy Hook.

MORE RECENT CHANGES

At the close of the ice age the land subsided to a level even lower than today. Then, the lowlands of Long Island were under water, and a narrow arm of the sea extended through the Hudson and Champlain valleys, reaching up the St. Lawrence valley and to the Ontario basin. On the Champlain beaches have been found the bones of whales and walruses. In the lower Hudson valley the deposits of this age are about seventy feet above sea level; at Albany, a little over 300 feet.

The most recent movements of the earth's crust gradually expelled the Champlain sea and left the land at its present altitude. During the past century surveys show that the upward movement is still progressing about the Great Lakes at the rate of from five inches to 100 miles in a century.

The most casual study of the above readily indicates how these gigantic upheavals have built our soils and changed their character, explaining their diversity and the oft-repeated statement as to the immense quantities of mineral matter stored in them for crop production from the disintegration of the rocks.

LIMESTONE LANDS

The existence of limestone ridges extending over so much of the state and most abundant along the main path of the glaciers is thus explained. Besides limestone of glacial origin, there are some deposits — though insignificant compared with the total amount of limestone land — formed by chemical action. Natural water contains carbon dioxide in solution. By heat or exposure the carbonic gas is driven off; whereupon the various forms of lime are precipitated and collect as a deposit. The farm lands containing, or adjacent to, limestone of any sort are some of the most productive in the state, lime being an important factor in the growth of many plants, particularly the clovers.

It is interesting to note in this connection that today, in some instances, these lands are benefited by an application of lime; the available supply being too small after years of leaching and generations of cropping. Over most of the state the application of lime is a comparatively inexpensive process, the limestone rock simply needing to be ground and brought to the soils requiring it. A generation or two ago the use of lime was quite common. It was usually obtained in a more or less caustic state as a by-product from kilns where lime was burned for commercial purposes. During the last two years of the nineteenth century and the first of the present one, the use of lime had been almost abandoned by farmers. The fathers had no real knowledge of its functions; they simply knew that frequently when it was applied to the land better crops followed. As time went on, with the decrease of vegetable matter in the soil, the land no longer responded when lime was added, and the yield of crops actually decreased; hence the old adage, "Lime makes the fathers rich and the sons poor." They did not know that the chief function of lime is not as a plant food but as an agent to put the soil in proper physical condition and as a liberator of plant food, of which — unless the vegetable matter in the soil is kept up — the lime will hasten the reduction, all of which scientific research has made clear.

MUCK LANDS

In contrast to the limestone lands are the mucks, which, while not extensive as compared to the whole, are very important as an economical addition to the total area of productive land, for they produce crops that are largely consumed by the well-to-do — those of a leafy nature like lettuce and celery, which require a warm, quick soil well supplied with vegetable matter. The muck soils, being made up of from 50 to 85 per cent of such from the decay of vegetation recent or remote, fill this requirement. There are in the state from 800 to 1,000 square miles of muck deposits, ranging from an acre or less in extent to tracts containing thousands of acres. The larger areas are found in the Conewango valley; in Chautauqua County; in southern Livingston County; the Oak Orchard swamp in Genesee County; the Montezuma marshes at the foot of Cayuga Lake; the Cicero swamp southeast of Oneida Lake; the Pope Mill swamp in southeastern St. Lawrence County; and the Wallkill marsh in the southern part of Orange County. While most of them are from two to ten feet deep, some are from thirty to forty.

A distinction should be made between peat and muck. The former is made up of organic matter not sufficiently decayed for high crop production. When dry, the peat may be burned. The mucks are in a more advanced state of decay and are fine in texture. They may be divided into two general groups. One is the tidewater swamps under the influence of salt water, on which flags and grasses are the prevailing type of vegetation. The salt water hinders decay. When drained, this is washed out and after a time the soil may be cropped. This type is found on Long Island. The other, and by far the greater, group, is composed of those scattered over the state, as mentioned above. These latter vary greatly, depending on the organic matter they contain, their age, and their plant food. This varies from 1¾ to 2½ per cent of nitrogen (much of which is in an unavailable form), from $\frac{1}{10}$ to $\frac{5}{10}$ per cent of potash, and sometimes from ¼ to ½ per cent of sulphur. Many of the muck lands are rich in marl or lime carbonate. About Caledonia in northern Livingston County the marl is many feet deep and of great purity. The finer deposits are now sold as a source of lime carbonate. This lime may be due to shells of mussels, which are often plainly visible. In other cases it is due to the growth of a certain kind of swamp moss that precipitates lime carbonate from the water, such water being reinforced with lime when adjacent to limestone lands.

Some of these muck lands are easily drained and have been tilled for a long period. For a considerable time, each year has seen an increasing area brought under culture, often at considerable cash outlay. After they are cleared and drained, the fact that they are so easily worked and often can be sub-irrigated by increasing the height of the water in the open ditches is an important factor in their reclamation. As land increases in value and there is greater demand for the products of these soils through the increase of a highly civilized population, additional areas will unquestionably be brought under cultivation, thus helping to answer the question of alarmists as to how coming generations are to be fed. Several attempts have been made to drain the Montezuma marshes, but from a financial standpoint they have not as yet been successful. A serious problem is the fact that they are so level that it is difficult to draw off the water. Without doubt, however, coming generations will see these marshes productive farm lands. Because of the ease of cultivation and the character of the crops grown on them, much space has been given to these lands, which constitute so small a part of the whole.

INTERMEDIATE TYPES OF SOIL

Between these extremes we have many types of soils, from the light sands to the heavy clays, over which the glaciers passed and on which they settled, all more or less rich in phosphorus and potassium from the disintegrated rocks and containing a good deal of organic matter from the decay of vegetation. All of these have exerted a tremendous and far-reaching influence on the productivity of the several parts of the state, which has greatly influenced the development and character of the commonwealth.

CHANGES IN RURAL CONDITIONS

The type of soil was a most important factor in the first settlement of the land. Later, lumbering and other matters not primarily agricultural caused the occupancy of regions not at all suited to agriculture. The fact that even the poorer, more elevated soils were supplied with organic matter and had a considerable amount of available plant food, with the settler requiring little more from the soil than sustenance for himself and family, made it possible for dwellers in such sections to live in comparative comfort. The destruction of the timber and in consequence the passing out of kindred industries, such as the sawmill and tannery, made the settler dependent wholly on the soil, from which most of the vegetable matter and available plant food were quickly exhausted; and the increasing demands of a growing civilization made much more than existence a serious problem, until on many of these hilly or sandy soils it is no longer possible for a man "to make a full and comfortable living from the land."

Naturally and properly the population has decreased. Their isolation from the highways of transportation has made it unprofitable to grow many crops, even if the land were capable of sustaining them, which is another factor in the abandonment of such lands. Hence, in what were once thriving communities, churches and schools can no longer be efficiently maintained, and naturally there has been a decline in population and in the character of those who remain — the latter a most serious menace to civilization and the welfare of the state. Why should men be urged to remain away from the advantages of civilization when at best they can only wring out a scanty living from the soil? Those who do live

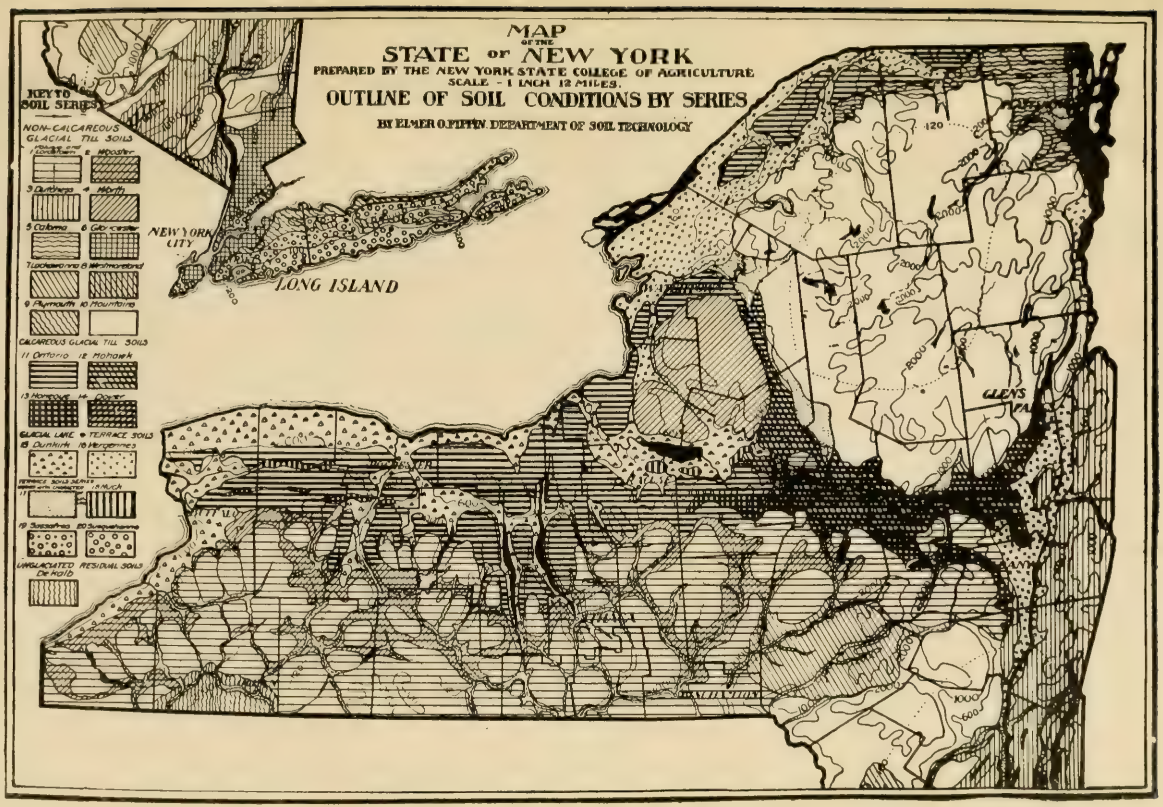

MAP OF THE STATE OF NEW YORK
PREPARED BY THE NEW YORK STATE COLLEGE OF AGRICULTURE
SCALE - 1 INCH 12 MILES.
OUTLINE OF SOIL CONDITIONS BY SERIES
BY ELMER O. FIPPIN. DEPARTMENT OF SOIL TECHNOLOGY
KEY TO SOIL SERIES
NON-CALCAREOUS GLACIAL TILL SOILS
1 Volusia and Lordstown
2 Wooster
3 Dutchess
4 Worth
5 Caloma
6 Gloucester
7 Lackawanna
8 Westmoreland
9 Plymouth
10 Mountains
CALCAREOUS GLACIAL TILL SOILS
11 Ontario
12 Mohawk
13 Honeoye
14 Dover
GLACIAL LAKE & TERRACE SOILS
15 Dunkirk
16 Vergennes
17 Terrace soils series
18 Muck
19 Sassafras
20 Susquehanna
UNGLACIATED RESIDUAL SOILS
De Kalb
NEW YORK CITY
LONG ISLAND
GLENS FALLS
120
200
600
1000
2000

FIG. 3.— SOILS OF NEW YORK STATE

comfortably in such regions are enabled to do so by makeshifts — such as boarding city dwellers, the most of the food they eat being purchased from outside. Left alone, there must be and is the moral and mental deterioration mentioned. The stronger lands more favorably located have nowhere near reached their limit of production and are crying for laborers. Here, less effort brings manifold more returns. Instead of the abandonment of these poor lands being an indication of decadence, it is rather a sign of thrift and vision. Thousands of acres of land, which have been and are even now being farmed, were never suited to agriculture. Had the country been settled from the Pacific eastward, most of it would never have been touched by the plow.

After nature, by her slow but sure processes, has had a chance, a century or two hence, to restore some of their fertility, when population becomes more dense and prices for food products shall be such as to make it worth while for men, with a better understanding of the conservation of nature's resources and with better equipment, again to till these poorer lands with profit, it may be wise to go back to them; now they would better be reforested or left to the kindly hand of Mother Nature.

The above should make apparent to the thoughful reader what effects the great forces of nature, operating through the ages to form our soils, have been and are exercising, not only on the agricultural but on the civic life of our people — making us appreciate our immense area of highly productive lands enriched with mineral and organic plant food, the preparation of which began when the morning stars first sang together, and able to sustain, when properly handled, millions yet unborn. Truly, those who are so favored as to possess a share of them — for the lands are always for all the people, we who till them being stewards — have "their lines cast in pleasant places and have a goodly heritage."

THE CLIMATE OF NEW YORK STATE

W. M. Wilson and R. A. Mordoff

Department of Meteorology, Cornell University, Ithaca, N. Y.

Climate has been defined as the sum total of all the weather. It is, therefore, only by observing the weather of a place or region from day to day through a long period of years that a knowledge of its climate may be obtained.

New York State was particularly fortunate in having at the head of its educational system men who, early in the nineteenth century, recognized the importance of systematic weather observations.

On March 1, 1825, the Board of Regents of the University of the State of New York passed a resolution, directing that academies incorporated by the board should be furnished with a thermometer and rain gauge, and later that participation in the literature fund, which was under the control of the board, should be contingent upon the maintenance of a series of weather observations in conformity with the rules adopted by a committee appointed by the regents. This committee consisted of Vice Chancellor Simeon DeWitt, Gerrit Y. Lansing, and John Craig.

More than fifty academies entered into this arrangement, and the data thus secured were published from time to time in the annual reports of the board.

It is worthy of note that this was the first important attempt made in this country toward an investigation of local climate. This system was continued until the close of 1848, a period of about twenty-four years, when a reorganization was effected with much better equipment and larger financial support, to conform to the more extensive and homogeneous system formulated by Professor Joseph Henry, secretary of the Smithsonian Institute at Washington, and designed to embrace the largest possible field of observation, both in the United States and adjacent countries. The New York State Legislature continued to make liberal appropriations for the support of the part in this scheme assigned to New York until 1863, when the prosecution of the Civil War became of such absorbing importance that this work, with other public enterprises of a scientific nature, was sacrificed to the larger needs of the nation. The observations were, however, continued at military posts that had been interested in the work by Professor Henry, as well as by some private individuals, the regular monthly reports of observations being made direct to the Smithsonian Institute at Washington.

The organization of the National Weather Service by act of Congress in 1870, which placed all work of this character in the hands of the signal corps of the United States army, resulted in the establishment of five regular observing stations in New York State, which number, under the later administration of the U. S. Weather Bureau, was increased to nine.

The New York State Weather Service, or Bureau, as it was designated, was created by act of legislature in 1889, with Andrew S. Draper, superintendent of public instruction; E. A. Fuertes, professor of civil engineering at Cornell University, and Simeon Smith, treasurer for the city of Ithaca, as commissioners.

Later, Professor Fuertes was made director and under his administration, with the able assistance of Mr. Eben T. Turner as meteorologist, the service was rapidly developed and observing stations established in all parts of the state.

A most excellent report on the climate of New York, by Mr. Turner, appears in the fifth and eighth annual reports of the director. The New York service was finally merged with the Climatological Service of the United States Weather Bureau in 1899, under whose direction the work has been carried on up to the present time. It was fortunate that the general scheme at the outset was so well considered and so thoroughly adhered to that few changes in the method of making and recording the observations were made necessary by the advancement of the science during all these years; and although many different instruments were used and many individuals participated in the work, the results for the whole period of 84 years are in all essentials homogeneous and comparable.

THERMOMETERS IN USE

The thermometers used by the early observers were mostly made by Mr. Kendall of New Lebanon, N. Y., but in later years were gradually replaced by those of other makers. The Fahrenheit scale was, however, used throughout the series.

Three observations of the temperature were made each day, the first being just before sunrise, the second at 3 P. M., and the third just after sunset.

Beginning about 1890 the thermometers in use were gradually supplanted by self-registering maximum and minimum thermometers, the use of which reduced the work to a single observation each day.

RAIN GAUGES

There were five types of rain gauges used in this series, as follows: the Regents gauge (1825–1833); the DeWitt (1834–1848); the Smithsonian (1849–1889); the Fuertes (1890–1899); U. S. Weather Bureau Standard (1900 to date). It is not to be understood that all gauges at individual stations were changed when a new type of gauge was adopted, but that the change from one type to another was made gradually as the gauges at individual stations became unserviceable. In order to determine whether or not there were serious discrepancies in the records due to the use of different types of gauges, the Weather Bureau at Ithaca made a series of comparative observations covering five years, using the types of gauges above mentioned, together with a U. S. Weather Bureau Standard gauge.

A study of the data thus obtained indicated that the DeWitt gauge, in use from 1834 to 1848, gave results about four per cent below those of the Standard gauge and that the Smithsonian and Fuertes gauges, in use from 1849 to 1899, gave results about three per cent greater than the standard.

It has not been possible to ascertain when and for what period the different gauges were in use at individual stations, and for that reason an attempt to apply a correction to the records is not considered advisable. Taking the series as a whole, it would seem that the errors arising from the use of the different types of gauges tend, in a large measure, to counterbalance each other and that the record, as a whole, may be taken as fairly representing the true conditions.

SNOWFALL MEASUREMENTS

The most serious error in the records is undoubtedly in connection with the measurements of precipitation in the form of snow. This has always been a difficult problem and, even under the most approved methods, when high winds prevail and there is much drifting, there is a considerable error. A study of the earlier records for the winter months indicates that, as a rule, the amounts recorded from snow were probably somewhat less than the true readings.

GENERAL CLIMATIC CONTROL

The principal factors that determine the general climate of a place or region are the following: latitude; elevation of the land surface; proximity of large bodies of water; prevailing winds; and the location of the place or region with respect to the path of cyclonic and anticyclonic disturbances.

The latitude determines the amount of heat energy, technically called insolation, received from the sun; elevation influences both temperature and moisture; bodies of water moderate the extremes of temperature within their influence; winds not only transport the temperature conditions of the regions from which they come, but are moisture carriers as well; and cyclonic and anticyclonic disturbances are the principal causes of extremes of temperature, and, for most regions, the chief factors in the amount and distribution of precipitation.

The climate of places or regions even in the same latitude differ widely, although the amount of insolation received from the sun at all places equally distant from the equator is exactly the same. For example, the average annual range of temperature between the warmest and coldest months for New York City (January, 30 degrees, and July, 74 degrees) is 44 degrees; while for Eureka, California, the January average is 47 degrees, the July, 56 degrees and the range 9 degrees, although the latitude is practically the same in both cases, and both have the same mean annual temperature, 52 degrees. The explanation for this wide difference is found in the prevailing winds, which are westerly in both cases. The temperature of Eureka is dominated by the winds from the Pacific Ocean, which are relatively warm in winter and cool in summer, while that of New York City is influenced mainly by winds from the interior, which are decidedly warm in summer and cold in winter.

The tempering effect of the Great Lakes, over which the prevailing winds blow, is similar, except in degree, to that of the Pacific Ocean, and is plainly evident in the more equable climate of those parts of New York State bordering on Lakes Ontario and Erie.

The effect of elevation is to cause an average decrease in temperature of about 1 degree for each 300 feet of ascent. For a state like New York, with the elevation of its land surface ranging from sea level to more than 5,000 feet, this becomes an important factor in the local climate of many sections, as is clearly indicated by the wide difference between the temperature condition of the plateau divisions and adjacent lowlands.

New York State is supplied with moisture principally by the winds that come from the Atlantic Ocean through the action of cyclonic storms, the prevailing westerlies playing but a small part in the rainfall of the state.

Cyclonic storms are vast whirlwinds turning counter-clockwise and covering perhaps one-half of the United States at one time. The winds blow from all sides spirally inward toward the center of the storm, ascending as they advance toward the center. Thus, eastward of the storm center the winds blow from some easterly point toward the west, and westward of the center from some westerly point toward the east. Many of these storms have their origin in the western part of the United States and Canada, and are carried eastward by the prevailing westerly winds. Others originate in the southwestern states, in the Gulf of Mexico, or in adjacent waters, and move northeastward. Most of these storms either cross New York or pass so near it that their influence is felt over at least a part of the state.

When a cyclonic storm approaches New York, either from the south or west, the moisture-laden air from the Atlantic Ocean is drawn inland toward the storm center, and, being cooled through its ascent, gives up its moisture in the form of rain or snow. While the influence of the Great Lakes as a moisture supply for New York is appreciable, particularly along the western slope of the Adirondack Mountains, it is wholly secondary to the influence of the Atlantic Ocean on the state as a whole.

These are the larger and more general controls of the climate of New York. The local aspects of its climate, which are largely due to its varied topography and give to the state a diversity of climate seldom encountered within an equally restricted area, are shown in detail by climatological tables which follow.

CLIMATIC DIVISIONS

Because of the great diversity of its climate (due for the most part to its position between the Great Lakes and the Atlantic Ocean and to its varied topography) and for convenience in discussion, New York State, has been divided into ten climatic divisions or zones (Fig. 4). The lines that separate the divisions are, of course, arbitrary, while the changes of climate from one division to another is gradual. Nevertheless, each division possesses certain general climatic features not common to the remaining divisions.

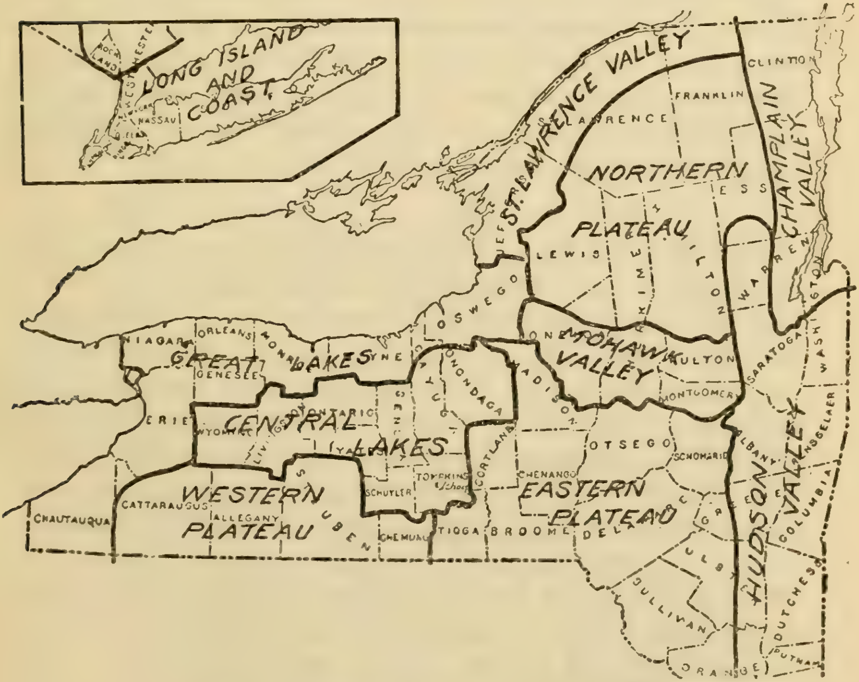

LONG ISLAND AND COAST
NASSAU
ST. LAWRENCE VALLEY
CLINTON
FRANKLIN
CHAMPLAIN VALLEY
NORTHERN PLATEAU
LEWIS
ESSEX
HAMILTON
WARREN
OSWEGO
MOHAWK VALLEY
FULTON
MONTGOMERY
SARATOGA
WASHINGTON
NIAGARA
ORLEANS
GREAT LAKES
GENESEE
ERIE
CENTRAL LAKES
ONONDAGA
MADISON
OTSEGO
SCHOHARIE
ALBANY
RENSSELAER
HUDSON VALLEY
COLUMBIA
DUTCHESS
PUTNAM
ORANGE
SULLIVAN
ULSTER
GREENE
DELAWARE
EASTERN PLATEAU
CHENANGO
BROOME
TIOGA
CORTLAND
TOMPKINS
SCHUYLER
CHEMUNG
STEUBEN
WESTERN PLATEAU
ALLEGANY
CATTARAUGUS
CHAUTAUQUA
WYOMING

FIG. 4.—CLIMATIC DIVISIONS OF NEW YORK

TEMPERATURE

The general distribution of temperature for the state and the changes that take place from season to season may best be indicated graphically by charts, showing the average temperature for those months that are fairly representative of the different seasons. For this purpose the months of January, April, July, and October have been selected. As the charts are self-explanatory, further special reference to them is unnecessary. The temperature of the Great Lakes division is largely influenced by the proximity of Lake Ontario, which borders it on the north, and by Lake Erie, which forms a part of the boundary line on the west.

Lake Erie, lying directly in the path of the prevailing westerly winds, produces an important effect, especially over the land that slopes toward the west. The Chautauqua County " Grape Belt," which extends along the southern shore of Lake Erie for a distance of about sixty miles and is from two to six miles wide, has the most equable climate in the state, except the region along the Atlantic Coast. This is directly due to the tempering influence of the lake, which holds vegetation in check in the spring until the danger from frost is over and gives long, mild autumns with unusually late fall frosts, and winters much less severe than are experienced in the more elevated sections a few miles to the west.

The effect of Lake Ontario in modifying the conditions along its southern border, while not so marked as that of Lake Erie, is important, especially when cold waves attended by low temperatures sweep down from the Canadian provinces, the differences in temperature between the northern and southern sides of the lake frequently amounting to twenty or more degrees Fahrenheit. Probably the most noticeable influence of Lake Ontario is over that part of the St. Lawrence division lying between the lake and the Adirondack Mountains. Here the prevailing westerly winds that traverse the entire length of Lake Ontario produce their maximum effect, tempering the heat of summer and the cold of winter, except when the lake is frozen over. As a result the springs are backward and cold, but the autumns comparatively warm. The winter season is severe owing to the frequency of storms and cold waves.

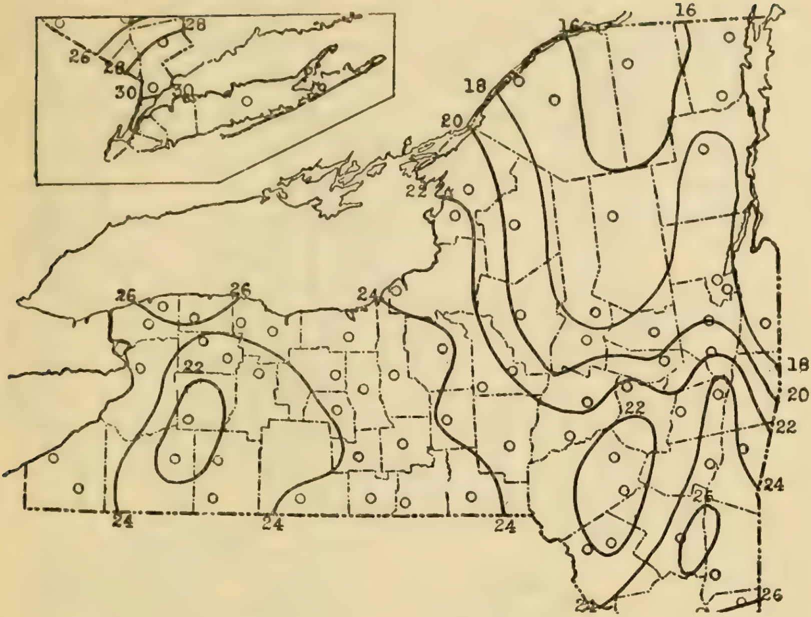

28
26
28
30
30
16
16
18
20
22
24
26
26
24
22
18
20
22
22
24
26
24
24
24
24
26

FIG. 5.— AVERAGE JANUARY TEMPERATURE

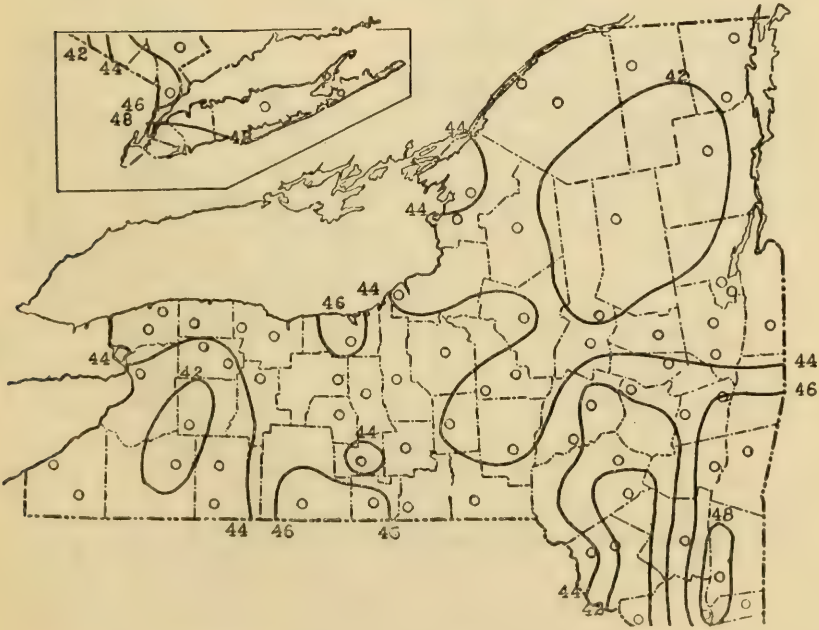

42
44
46
48
48
44
44
44
46
42
44
42
44
44
46
46
44
46
48
44
42

FIG. 6.— AVERAGE APRIL TEMPERATURE

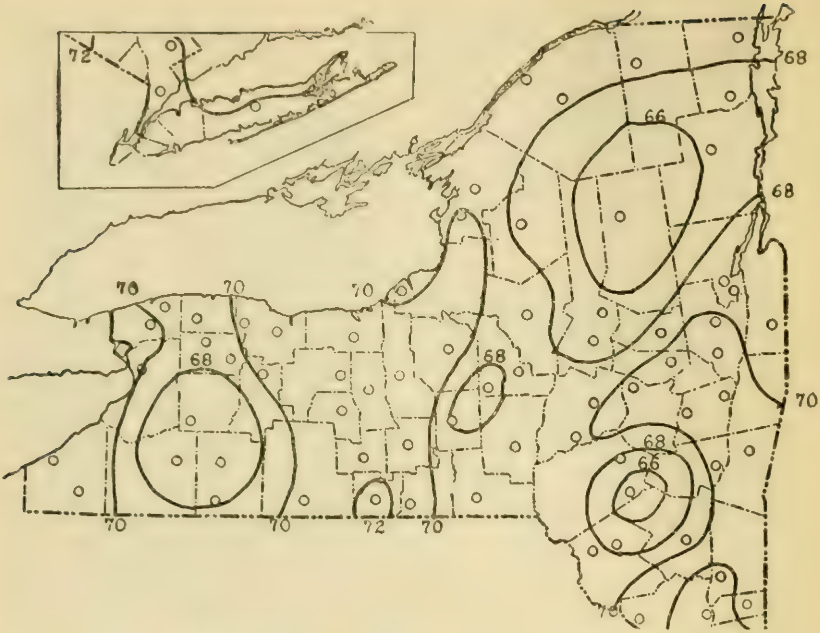

72
68
66
68
70
70
70
70
68
68
70
68
66
70
70
70
72
70
70

FIG. 7.— AVERAGE JULY TEMPERATURE

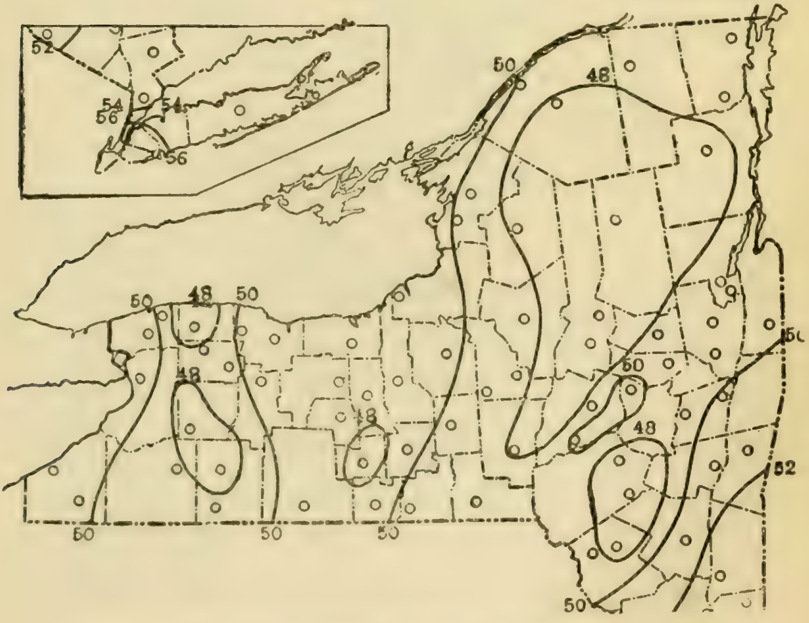

52
54
56
54
56
50
48
50
48
50
48
48
50
48
50
52
50
50
50
50

FIG. 8.— AVERAGE OCTOBER TEMPERATURE

The plateau divisions present almost typical continental types of climate. The elevation and comparatively dry atmosphere combine to give high day temperatures, but the nights are decidedly cool, owing to the rapid loss of heat by radiation. During the summer months the maximum temperature frequently reaches 90 degrees or above. Winter begins early and continues severe throughout the season, temperatures of 40 degrees below zero not being uncommon in the more exposed localities.

Long Island and the Atlantic Coast exhibit conditions that are in marked contrast to those of the plateau divisions. Indeed, the climate of this division is influenced more by the ocean than by the adjacent land surfaces, being characterized by mild winters and relatively cool summers with comparative freedom from sudden and extreme changes of temperature.

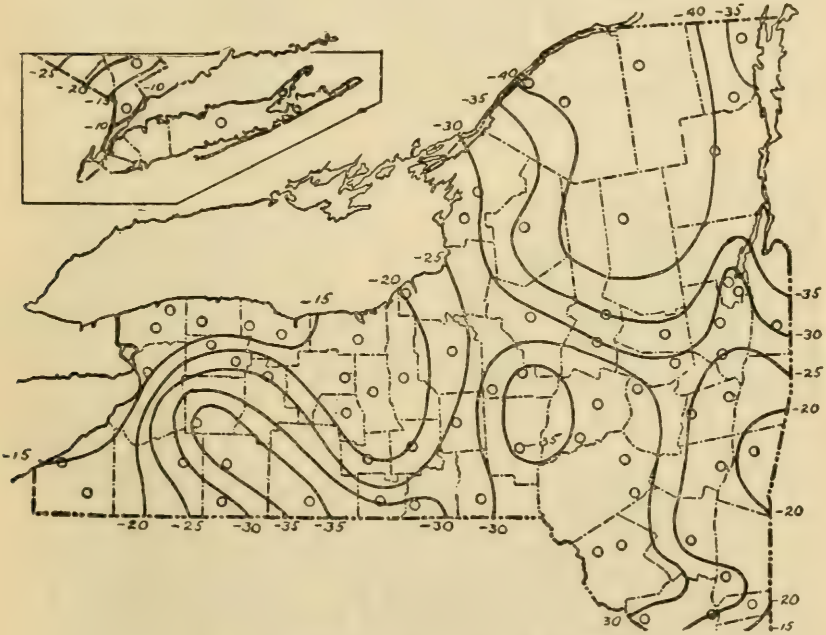


FIG. 9.— ABSOLUTE MINIMUM TEMPERATURE

The chart showing the lowest temperatures recorded in the various parts of the state (Fig. 9) should prove of interest. It will be noted that very low temperatures have been experienced, 40

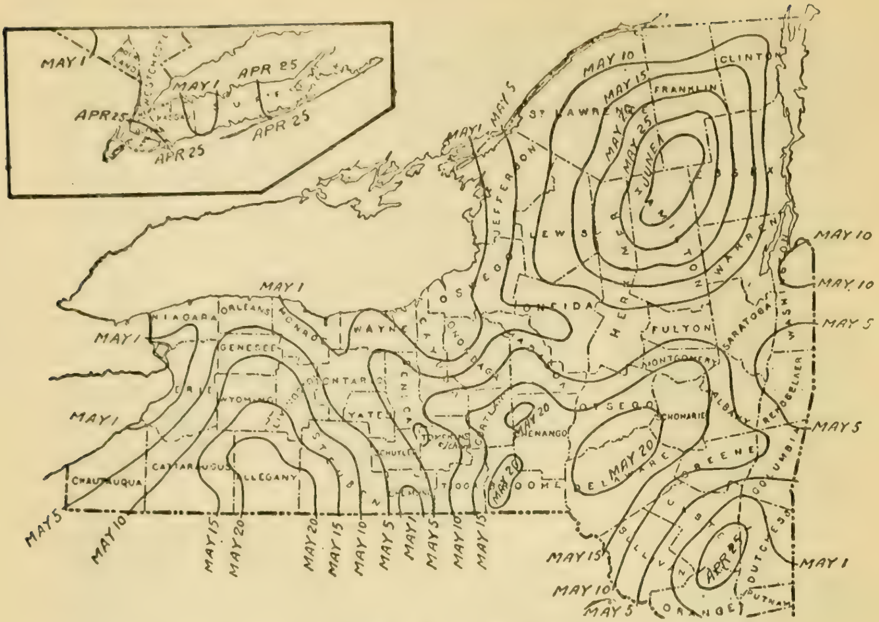

MAY 1
APR 25
MAY 1
APR 25
APR 25
APR 25
MAY 10
MAY 15
MAY 20
MAY 25
JUNE 1
MAY 5
MAY 1
CLINTON
FRANKLIN
ST LAWRENCE
JEFFERSON
LEWIS
HAMILTON
ESSEX
WARREN
OSWEGO
ONEIDA
HERKIMER
FULTON
SARATOGA
WASHINGTON
MONTGOMERY
RENSSELAER
ALBANY
SCHOHARIE
OTSEGO
CHENANGO
MAY 20
MAY 20
MAY 20
NIAGARA
ORLEANS
MONROE
WAYNE
ONONDAGA
GENESEE
ONTARIO
ERIE
WYOMING
YATES
SENECA
CAYUGA
CORTLAND
TOMPKINS
SCHUYLER
STEUBEN
CATTARAUGUS
ALLEGANY
CHAUTAUQUA
TIOGA
BROOME
DELAWARE
GREENE
COLUMBIA
SULLIVAN
ULSTER
DUTCHESS
PUTNAM
ORANGE
APR 25
MAY 10
MAY 10
MAY 5
MAY 5
MAY 1
MAY 1
MAY 5
MAY 10
MAY 15
MAY 20
MAY 20
MAY 15
MAY 10
MAY 5
MAY 1
MAY 5
MAY 10
MAY 15
MAY 15
MAY 10
MAY 5
MAY 1

FIG. 10.— AVERAGE DATE OF LAST KILLING FROST IN SPRING

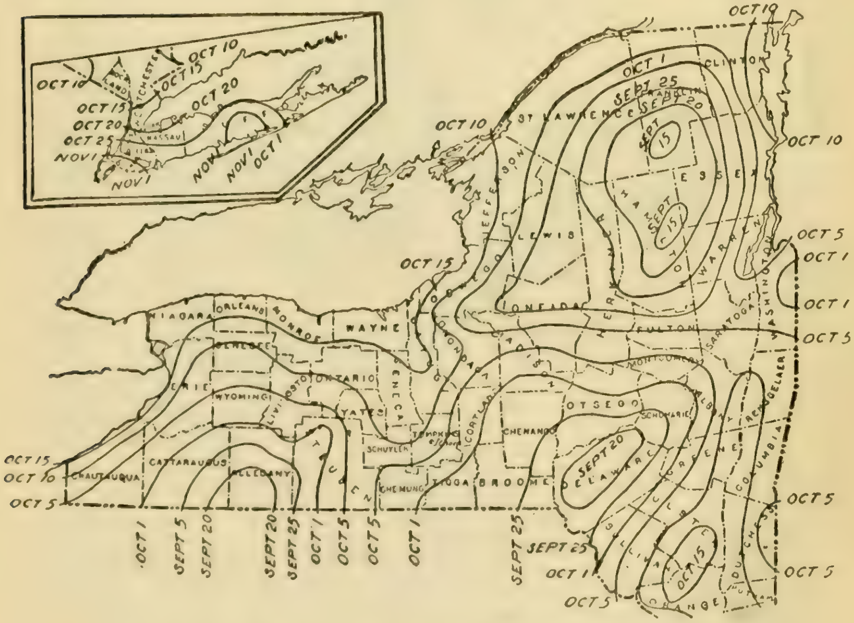

OCT 10
OCT 15
OCT 10
OCT 15
OCT 20
OCT 25
NOV 1
NOV 1
OCT 20
NOV 1
NOV 1
OCT 1
OCT 10
OCT 1
SEPT 25
SEPT 20
SEPT 15
SEPT 15
CLINTON
ST LAWRENCE
FRANKLIN
ESSEX
OCT 10
OCT 10
JEFFERSON
LEWIS
HAMILTON
WARREN
OCT 15
OCT 5
OCT 1
OCT 1
OCT 5
ONEIDA
FULTON
SARATOGA
WASHINGTON
NIAGARA
ORLEANS
MONROE
WAYNE
OSWEGO
ONONDAGA
MADISON
HERKIMER
MONTGOMERY
GENESEE
ERIE
LIVINGSTON
ONTARIO
WYOMING
YATES
SENECA
CAYUGA
CORTLAND
OTSEGO
SCHOHARIE
ALBANY
RENSSELAER
CHENANGO
TOMPKINS
SCHUYLER
CHEMUNG
TIOGA
BROOME
DELAWARE
SEPT 20
GREENE
COLUMBIA
CATTARAUGUS
ALLEGANY
CHAUTAUQUA
STEUBEN
OCT 15
OCT 10
OCT 5
OCT 5
OCT 1
SEPT 5
SEPT 20
SEPT 20
SEPT 25
OCT 1
OCT 5
OCT 5
OCT 1
SEPT 25
SEPT 25
OCT 1
OCT 5
SULLIVAN
ULSTER
DUTCHESS
PUTNAM
ORANGE
OCT 15
OCT 5

FIG. 11.— AVERAGE DATE OF FIRST KILLING FROST IN FALL

degrees or more below zero, generally over the Northern Plateau, and that temperatures of 35 degrees below zero are not uncommon over the elevated parts of the Eastern and Western plateau divisions.

But it is in the relative freedom from excessive cold along the Great Lakes that interest centers chiefly, for in this is found the explanation of the successful fruit growing in that section. Only Long Island and a small part of the adjacent coast enjoys greater freedom from excessive cold in winter.

FROSTS

The term "frost" is used to designate a deposit of ice crystals on the surface of plants or other objects, and also temperatures that are injurious to vegetation. Weather bureau observers use the term in the latter sense, and record three degrees of frost — light, heavy, and killing. Light frost is recorded when only the tenderest plants are injured, heavy when the injury is more marked, and killing when the staple crops of the region are killed or badly injured.

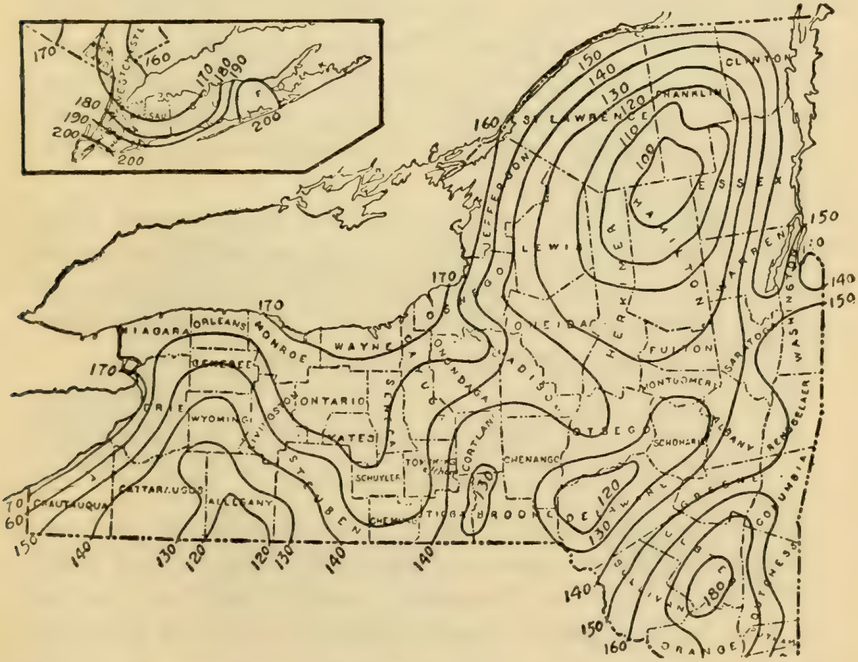

170
160
180
190
200
170
180
190
200
200
150
140
130
120
110
100
Clinton
Franklin
St. Lawrence
Jefferson
Lewis
Hamilton
Essex
Warren
Oneida
Herkimer
Fulton
Montgomery
Saratoga
Washington
Rensselaer
Albany
Schoharie
Otsego
Madison
Onondaga
Oswego
Wayne
Cayuga
Seneca
Ontario
Yates
Schuyler
Tompkins
Cortland
Chenango
Broome
Tioga
Chemung
Steuben
Allegany
Cattaraugus
Chautauqua
Erie
Wyoming
Genesee
Niagara
Orleans
Monroe
Livingston
Delaware
Greene
Columbia
Dutchess
Ulster
Sullivan
Orange
170
170
170
160
150
140
150
140
130
120
130
140
150
160
180
130
120
120
130
140
140
150
160
170
140
150

Fig. 12.—Average Number of Days Between the Last Frost in Spring and the First in Fall

Special note is made of the dates of the last killing frost in spring and the first in fall. If for any reason the observer fails to note the dates of frosts, the date of the last freezing temperature, 32 degrees, in spring, and the date of the first freezing temperature in fall, are regarded as the dates of the last and first killing frosts for the respective seasons.

The accompanying charts (Figs 10, 11, and 12) showing the average date of the last killing frost in spring, the first in fall, and the average number of days between frosts, are based on records made at about 150 places in the state. These charts, for the most part are self-explanatory. It may be pointed out, however that the average dates of frosts, as well as the average number of days between frosts, shown by these charts, are simply arithmetical averages. For example, the average date of the last killing frost in spring for the region along the shore of Lake Ontario falls on May 1, which means that in half the years killing frost occurred before May 1, and in half the years after May 1. It is obvious, therefore, that at the time of the average date as shown by the chart the risk of frost is 50 per cent — too great for tender crops. In spring the risk of frost decreases rapidly after the average date, falling to perhaps 20 per cent at the end of five days and practically disappearing at the end of ten days after the average date. In the fall the frost risk increases rapidly as the average date of the first fall frost approaches, becoming again 50 per cent at the time of the average date.

With respect to the average length of the season between frosts it should be noted also that there are perhaps ten days at either end of the season when frosts are likely to occur, and that the season of practical immunity from frost is about twenty days shorter that the average as shown by the chart.

PRECIPITATION

PRECIPITATION RECORDS

The accompanying charts, showing the average annual and seasonal precipitation, are based on observations made daily at about 200 places in the state. The records vary in length and also in the years covered, but no records covering a period of less than

15 years have been used in computing the averages. Several of the records cover a period of more than 90 years, a few more than 50 years, and many more than 30 years. Several types of rain gauges have been used in the series, but it is believed that no serious errors have arisen therefrom.

Precipitation occurring in the form of snow was reduced to its water equivalent by melting the snow and measuring and recording the depth of the water thus obtained, as in the case of rain; or, when it was impracticable to melt the snow, the water equivalent was recorded as one tenth of the actual depth of the unmelted snowfall. When snow is very wet or very dry the error in applying this so-called "1 to 10 rule" is considerable, but when applied to the snowfall of a season, which includes snowfalls of every character, or to that of many seasons, experience has shown that the error, so far as averages are concerned, is not serious.

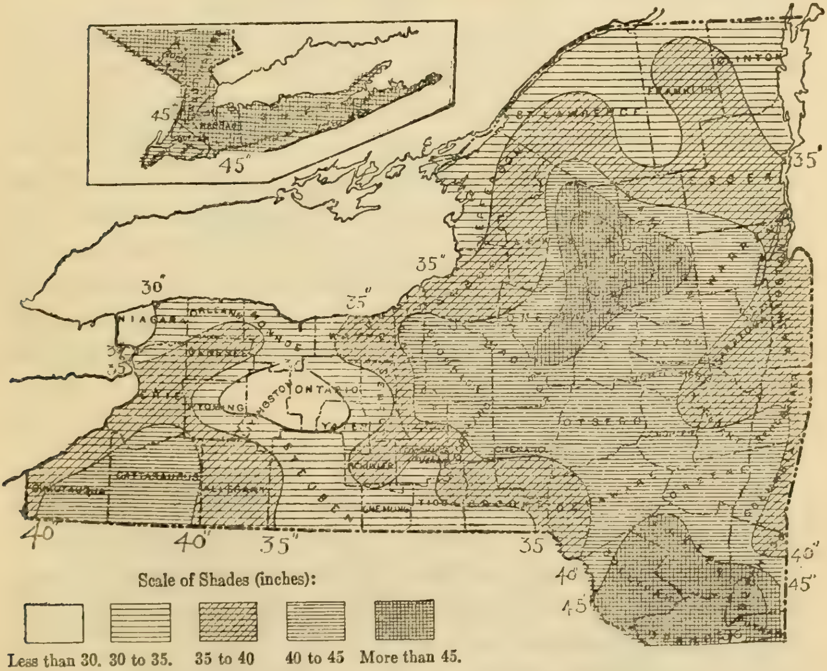

45"
45"
35"
30"
35"
35"
40
40"
35"
35
40"
45"
40"
45
45"
Niagara
Orleans
Monroe
Wayne
Genesee
Wyoming
Livingston
Ontario
Yates
Erie
Cattaraugus
Chautauqua
Allegany
Chemung
Tioga
Otsego
Chenango
St. Lawrence
Franklin
Clinton
Scale of Shades (inches):
Less than 30.
30 to 35.
35 to 40
40 to 45
More than 45.

FIG. 13.— NORMAL ANNUAL PRECIPITATION

ANNUAL PRECIPITATION

The average amount and distribution of annual precipitation is shown graphically by the accompanying chart (Fig. 13). Examination of this chart brings out clearly the remarkably wide variation in the average amount of rainfall received in the different divisions of the state. In general, the average rainfall of the eastern half of the state greatly exceeds that of the western half, except possibly for the more elevated parts of Chautauqua and Cattaraugus counties. For the Central Lakes division, including parts of Wyoming, Livingston, Ontario, and Yates counties, as well as the western part of Niagara County, the annual rainfall is the lightest in the state, slightly less than 30 inches annually. The heaviest precipitation, slightly in excess of 50 inches, occurs in the Lower Hudson division, including parts of Dutchess and Putnam counties and along the western slope of the Northern Plateau.

WINTER PRECIPITATION

The amount and distribution of precipitation for the months of December, January, and February is shown by Fig. 14.

For the state as a whole the winter season is relatively dry, by far the greater portion of the state receiving less than 9 inches during the three months. The driest part of the state during winter is the Champlain Valley division, with the remarkably low average of less than 5 inches. It is also dry in winter over most of the Central Lakes division, but over the southeastern counties, including Long Island, and for the greater part of the Mohawk Valley division the winter rainfall is liberal, ranging in amount from 11 to more than 12 inches.

SPRING PRECIPITATION

The average precipitation for the months of March, April, and May (Fig. 15) shows increased amounts and a more uniform distribution than that of winter, but the light precipitation persists over most of the Central Lakes division and over most of the Northern Plateau and adjacent divisions, while for Long Island and the southeastern counties, and for most of the Mohawk Valley division the precipitation ranges from about 10 to 12 inches, nearly the same as that of the winter months.

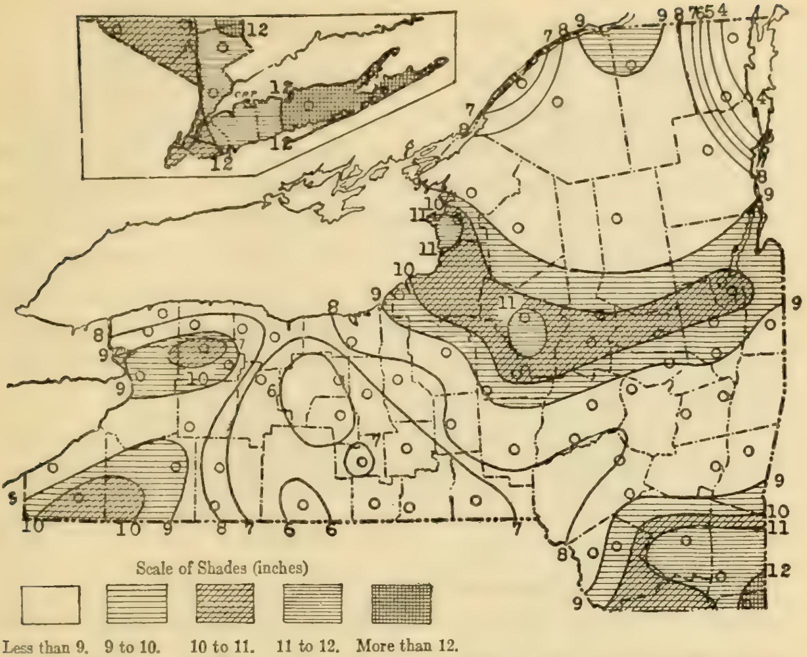

Scale of Shades (inches)
Less than 9.
9 to 10.
10 to 11.
11 to 12.
More than 12.

Fig. 14.— Average Winter Precipitation (December, January, February)

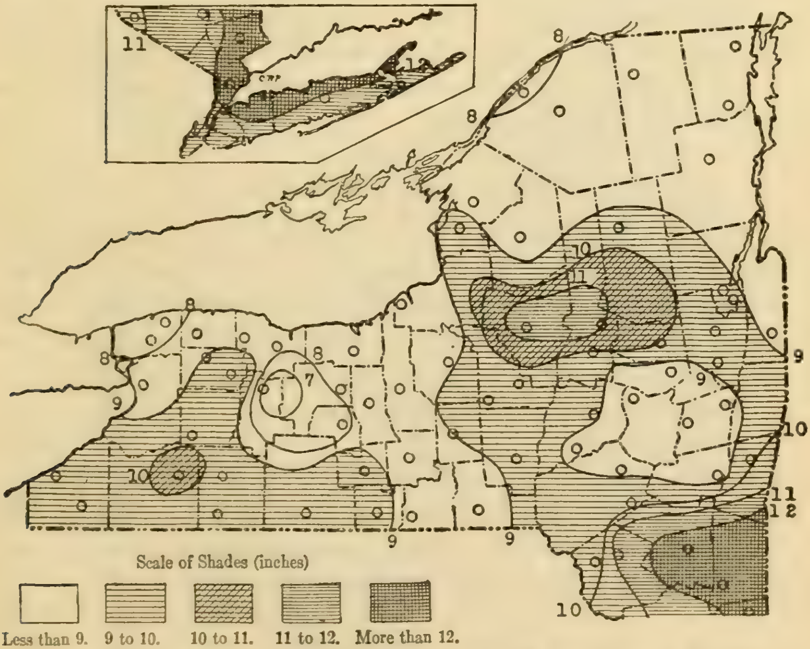

Scale of Shades (inches)
Less than 9.
9 to 10.
10 to 11.
11 to 12.
More than 12.

Fig. 15.— Average Spring Precipitation (March, April, May)

SUMMER PRECIPITATION

The summer rainfall — June, July, and August (Fig. 16) — is not only greater than that of any other season, but the distribution is decidedly more uniform. The only parts of the state to receive less than 9 inches during the summer season are Niagara and Orleans counties, and a narrow belt along the St. Lawrence River. Nearly all of the remainder of the state receives more than 10 inches, a large part more than 11 inches, and considerable areas, particularly the Eastern and Western plateau divisions and the lower Hudson valley, receive more than 12 inches during the three months.

It is interesting to note that the precipitation for Long Island in summer is less than during either the winter or spring seasons.

FALL PRECIPITATION

The fall — September, October, and November (Fig. 17) — is a season of light rainfall, particularly in the Central Lakes division and along the shore of Lake Ontario. Over all of this region the fall precipitation is less than 9 inches, and over much of it the average is less than 8 inches. Over most of the eastern half of the state the fall precipitation is liberal, ranging generally from 9 to more than 11 inches, a marked contrast to the conditions that prevail over the western half.

DROUGHTS IN NEW YORK

A serious and long-continued deficiency of precipitation affecting the state as a whole is of rare occurrence in New York. There have been many short periods when crops suffered from a deficiency of moisture, and many occasions when the deficiency was confined to one or more sections, but few state-wide droughts.

Perhaps the two most serious droughts in more recent years occurred in 1889 and 1908. In the former year the total rainfall for the months of June, July, and August, which normally is about 12 inches, averaged somewhat less than 6 inches for the entire state, except in the extreme southeastern counties and Long Island, where it was normal or above.

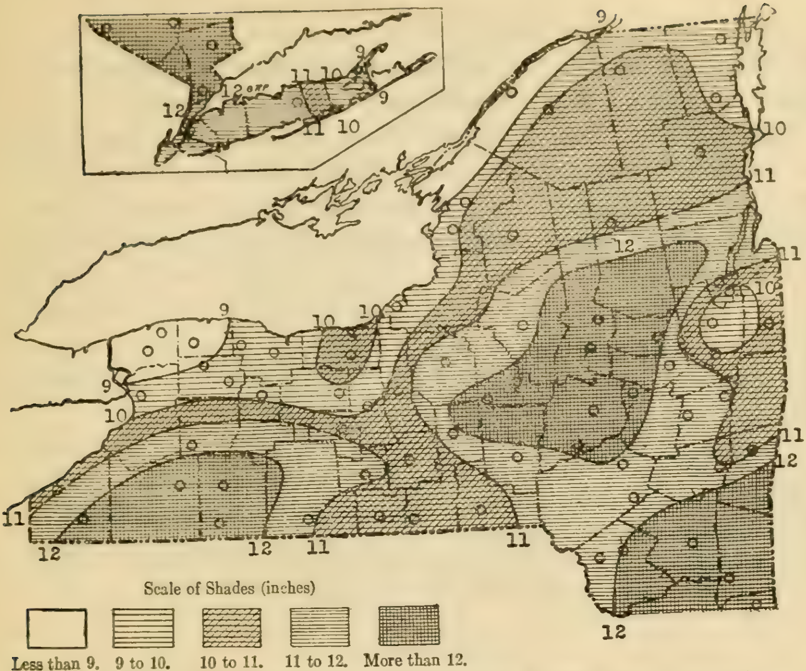

Scale of Shades (inches)
Less than 9.
9 to 10.
10 to 11.
11 to 12.
More than 12.

FIG. 16.—AVERAGE SUMMER PRECIPITATION (JUNE, JULY, AUGUST)

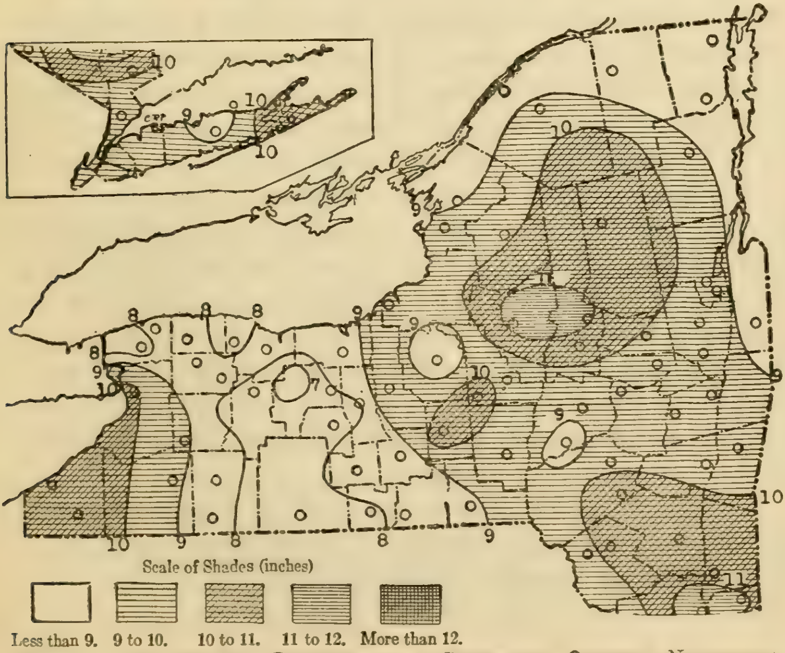

Scale of Shades (inches)
Less than 9.
9 to 10.
10 to 11.
11 to 12.
More than 12.

FIG. 17.—AVERAGE FALL PRECIPITATION (SEPTEMBER, OCTOBER, NOVEMBER)

As is usual, the western part of the state suffered more than did the eastern part, the total for the three months in some localities bordering on Lake Ontario being less than 3 inches.

The drought of 1908 occurred later in the season, beginning on August 23, and continuing, with the exception of a slight break on September 28 and 29 which produced no relief, until October 23, a period of 61 days. During a period of 36 days, from August 23 to September 27, there were 13 days on which no rain fell at any of the 125 recording stations in the state, and 7 days on which a light shower occurred at only one station. The water supply for most cities and towns, particularly in the interior, was greatly reduced, and in some cases entirely exhausted.

A drought lasting 40 days occurred in April, May, and June, 1903, and another of about 50 days in the same months in 1913; but, coming early in the season, when the loss by evaporation was not great, and being followed by copious rains during the latter part of June, the results were not serious.

SNOWFALL

The average annual snowfall for the state as a whole is about 65 inches, but it varies greatly in different parts of the state. It is greatest, nearly 180 inches, in Jefferson County immediately to the west of Lake Ontario, and least, 25 to 30 inches, over Long Island. For the other divisions of the state the annual fall of snow is approximately as follows: Hudson Valley, from about 40 inches over the southern part to about 70 inches over the northern; Mohawk Valley, 80 to 100 inches; Northern Plateau, 80 to 160 inches; Champlain Valley, 40 inches over the northern part to about 70 inches over the southern; St. Lawrence Valley, except the southern part of Jefferson County, 50 to 60 inches; the Great Lakes, along Lake Ontario, 40 to 80 inches, and along Lake Erie, 50 to 70 inches; Eastern and Western plateaus, 50 to 100 inches; Central Lakes, 40 to 80 inches.

Snow occurs usually from October to April, inclusive, but snow has been recorded both in May and September. The month of February has the greatest average snowfall.

THUNDERSTORMS

Thunderstorms are more frequent in the Hudson Valley and over Long Island than in other parts of the state, the average number being about 20 to 30 annually. They are also frequent along Lake Erie and Lake Ontario, Buffalo reporting as many as 55 in a single year. They are less frequent in the northern part and in the interior, the average number reported annually ranging from 6 to 14.

HAIL

True hail is a product of thunderstorms, but, fortunately, relatively few thunderstorms produce hail. Of the 20 to 30 thunderstorms that occur annually in the Hudson Valley and over Long Island, only about 3 or 4 cause an appreciable fall of hail. For the remainder of the state hail probably occurs at most places on an average of one or two times in the course of the year, but rarely does it cause any widespread destruction.

TORNADOES

Tornadoes are local whirlwinds of destructive violence, characterized by a funnel-shaped cloud that hangs pendant from the overhanging storm cloud. The path of destruction ranges in width from a few feet to perhaps half a mile, and in length from a few yards to several miles. They are most frequent over the western states, but no part of the United States east of the 105th meridian may be regarded as secure from their visitation.

According to Lieut. John P. Finley of the Signal Corps, U. S. A., an authority on tornadoes, 103 such storms occurred in New York in the 102 years, 1787 to 1888. The year of greatest frequency was 1888, when no less than 25 tornadoes occurred in the state. On July 11 of that year five separate and distinct tornadoes occurred in St. Lawrence County, three in Franklin, and one in Herkimer; while on May 28 of the same year, two occurred in Steuben County, two in Allegany, one in Chemung, and one in Oneida.

In more recent years perhaps the most notable storm of this character passed over Binghamton about 10:30 P. M., June 5, 1905. Its path was from 200 to 600 feet in width and something over a mile in length. Many trees were uprooted or twisted off and a number of houses were destroyed, but there was no loss of life. Tornadoes occurred in Monroe and Steuben counties in June, 1906.

WINDS

The prevailing winds of the state are westerly, generally shifting toward the north in winter and toward the south in summer. At some points, particularly Albany, Oswego, and Cooperstown, the southerly winds of summer persist throughout the fall and even into December and January. At other points, particularly in the mountainous sections, where local topographic conditions control the wind direction, the prevailing direction is merely that of a local current. This is the case at Ithaca, where the prevailing direction for the entire year except the spring months is from the southeast, due principally to the trend of the valley at the southern end of Cayuga Lake.

The so-called "night wind" of Cayuga Lake Valley is interesting, and serves as an example of the effect of local topography. It occurs during the summer months at times when the absence of cyclonic disturbances gives full play to local influences. Commonly it sets in a few hours after sunset as a light breeze from the south, and gradually increases in strength until a velocity of about eight miles per hour is reached, which continues steadily throughout the night. This current has its origin on the hillsides at the southern end of the lake and flows northward down the water courses converging into the main depression. As it moves northward over the smooth surface of the lake, it is augmented by the numerous cool currents that join the main stream through the water courses that debouch upon the valley from either side.

Night wind is air drainage on a large scale, the result of surface cooling when the heat from the sun is withdrawn. Winds of this character occur in other parts of the state where the local topography is similar.

Observations of the velocity of the wind are available only for the nine regular weather bureau stations in the state. The highest velocity for the state, 96 miles per hour from the southwest, was recorded at New York City on February 22, 1912, while velocities of 90 miles per hour or more occurred in 1914, 1915, and 1919.

At Buffalo the highest velocity, 92 miles per hour from the southwest, was recorded on January 31, 1914, while velocities of 90 miles per hour occurred in 1890, 1913, and 1917. In other parts of the state, velocities exceeding 70 miles per hour are rare.

SUNSHINE

It is obvious that with a clear sky the actual sunshine for any given place would be the number of hours between sunrise and sunset. This is called the possible sunshine. It varies greatly with the season, reaching the maximum in June and the minimum in December. It varies also with the latitude, but the variations from this cause within the limits of New York are small; and so far as effect is concerned the possible sunshine for all places within the state may be regarded as essentially the same.

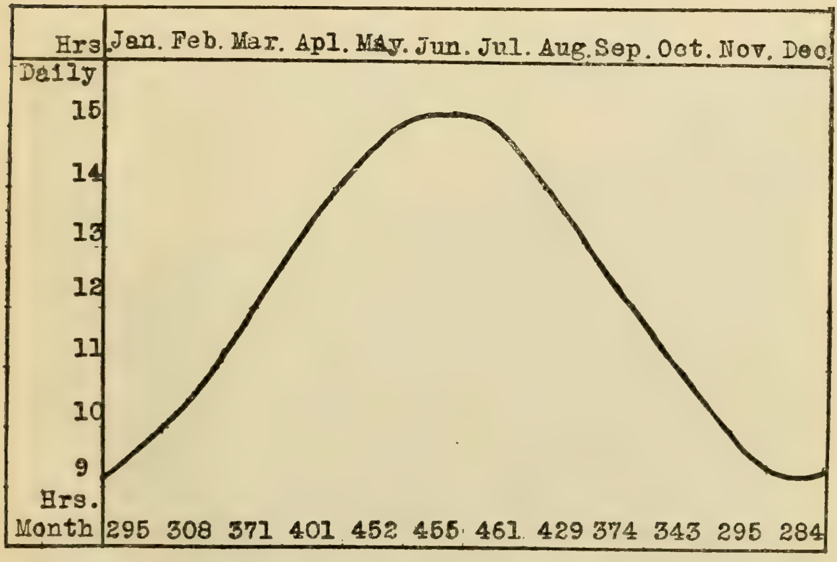


FIG. 18.— SEASONAL VARIATION IN LENGTH OF DAY WITH TOTAL NUMBER OF HOURS OF POSSIBLE SUNSHINE IN EACH MONTH AT LATITUDE 42° 27′ N. (ITHACA, N. Y.)

The accompanying graph (Fig. 18) shows the seasonal variation of possible sunshine for the latitude of Ithaca, N. Y., the figures at the bottom indicating the total number of hours of possible sunshine in each month.

The actual amount of sunshine in hours is recorded automatically at eight weather bureau stations in the state, and from the data thus obtained average daily and monthly values have been computed. These values may be expressed in two ways, namely, in hours of actual sunshine per day or month, or in percentage of the possible. The following table gives the average percentage of possible sunshine by months for the eight weather bureau stations having automatic records arranged in order of annual values. The total number of hours of actual sunshine at any station for any month may be obtained approximately by multiplying the total hours of possible sunshine for the month, as given at the bottom of Fig. 18, by the appropriate monthly percentage.

SUNSHINE — PERCENTAGE OF POSSIBLE

STATIONS	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
New York City	50	62	62	64	62	66	72	62	63	63	59	52	62
Rochester	29	40	48	53	59	66	73	68	63	55	31	25	51
Syracuse*	34	42	50	50	56	66	66	60	56	43	34	30	49
Canton	35	48	52	50	54	63	65	62	55	46	28	28	48
Albany	38	47	51	51	49	56	59	54	47	48	34	34	47
Buffalo	23	40	48	49	55	61	67	62	57	49	30	25	46
Ithaca*	33	41	42	42	50	58	56	58	56	42	31	26	45
Binghamton	29	39	44	44	46	53	53	47	43	40	23	22	40

* Average of 8 years, 1912–1919; other stations, 8 years, 1905–1912.

For the state as a whole, sunshine and cloudiness during daylight hours are about evenly divided, except for the Atlantic Coast division, where the average hours of sunshine is about 60 per cent of the possible. There is less sunshine over the south central counties than elsewhere in the state, Binghamton enjoying the distinction of having only about 40 per cent of the possible.

In the amount of sunshine New York ranks considerably below the central and western states. It lies well within what may be called the eastern cloudy belt, which includes the northern Appalachian Mountains, the Great Lakes region, and northern New England.

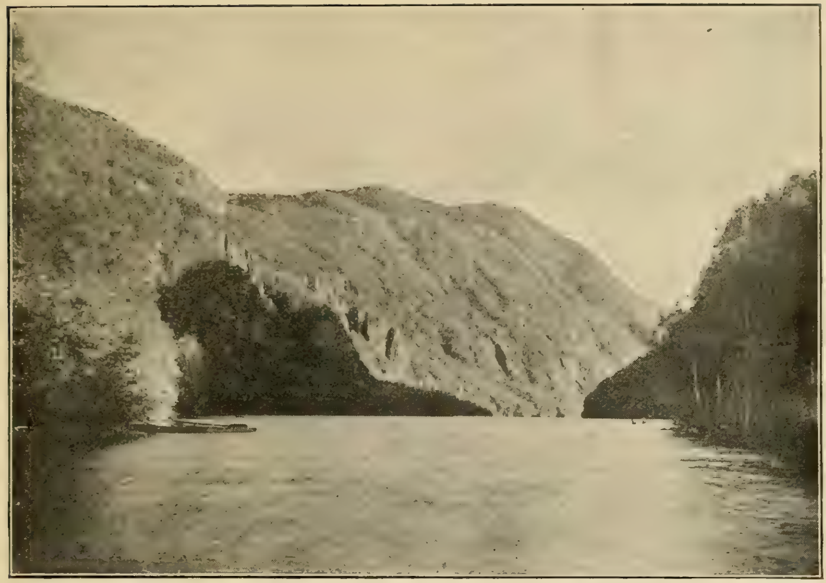


FIG. 19.—VIEW ON LOWER AUSABLE LAKE, SHOWING COLVIN MOUNTAIN

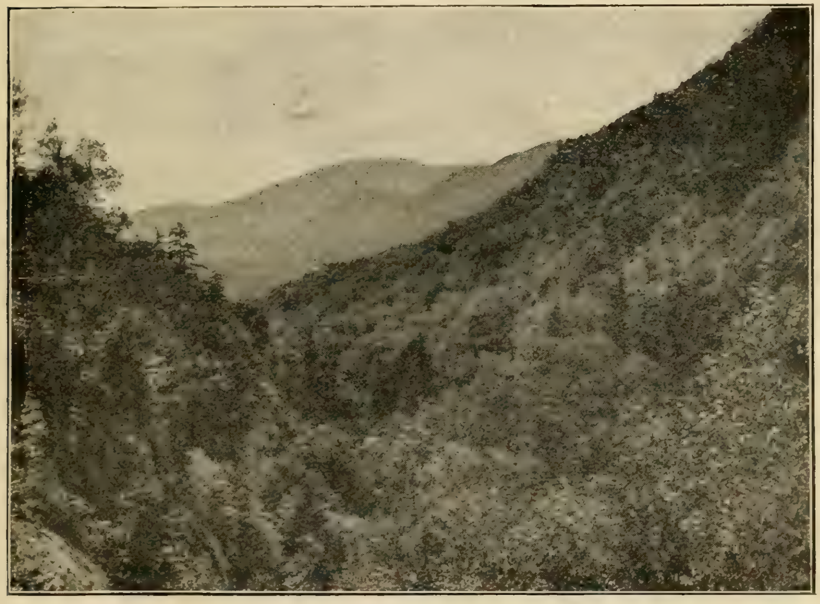


FIG. 20.—A TYPICAL ADIRONDACK FOREST, SHOWING SAWTOOTH RANGE AND SANTANONI MOUNTAIN

POINTS OF SCENIC INTEREST

To those for whom the wonders of nature hold a peculiar charm, New York presents a remarkable variety of allurements. Several counties of the state share in the magnificent scenery of the Adirondack region with its rugged peaks, its miles of forests, its deep valleys, and its beautiful lakes. Of these lakes, which, including large and small, number about 1,500, the most famous are Lake George and Lake Placid. Lake George, thirty-two miles in length and from one to two and one-half miles in width, lies between Warren and Washington counties. On the east side of this section, in Clinton county, is the famous Ausable Chasm.

The Catskills, while of far less extent than the Adirondacks, also contain a wealth of beautiful scenery. The Ashokan reservoir, from which New York City receives a portion of its water supply, forms a large lake in the eastern section. Small lakes are numerous, among them being Lake Mohonk, a spot of unusual beauty. Further south, where the Hudson breaks through the Highlands, the Palisades rise in nearly perpendicular walls 300 to 500 feet in height.

The Thousand Islands, clustered near the head of the St. Lawrence River, are among the well-known attractions in the state.

The most widely celebrated scenery in New York is that of Niagara Falls. This was the first public reservation in the United States to be acquired by condemnation and purchased with public moneys for the sole purpose of preserving natural scenery.

There are some remarkable falls in the Genesee River, whose headwaters are 2,500 feet above sea level. Between Livingston and Wyoming counties this river winds about through a gorge of unusual beauty. Letchworth Park, on the Wyoming County side of the river, is the property of the state, and, in scenery and scientific interest, ranks second to the Niagara Falls reservation.

The reservation of Watkins Glen, at the head of Seneca Lake in Schuyler County, contains a picturesque, rock-walled glen about three miles long, with many waterfalls and cascades.

Other points of interest include Trenton Falls near Utica, in West Canada Creek; Taughkannock Falls near the west shore of Cayuga Lake, and Ithaca Falls, at its head; Kaaterskill Falls in the Catskills: Glens Falls in the upper Hudson; and Cohoes Falls in the Mohawk.

To this list might be added a number of places well worthy of note, all of which add to the natural attractiveness of the state.

EARLY HISTORY

Previous to the settlement of this country by white men, New York State was the seat of the powerful league of the Five Nations, or Iroquois, as they were called by the French. The "Long House" of their home land extended from Lake George westward along the Mohawk valley through the Central Lakes region and to the western end of the present state.

The Mohawks, who were the leaders in war, occupied the land to the east and were known as the "Keepers of the Eastern Door." The Oneidas, or "People of the Stone," dwelt around Oneida Lake, the name arising from a rock that they held sacred and carried with them when they moved their home. West of the peaceful Oneidas lived the Onondagas, or "People of the Mountains." As the rugged country surrounding them made them secure against attack, they were regarded as the heart or center of the Long House and were called "Keepers of the Hearth Fire." This tribe was much revered, and in time of peace the supreme head of the Long House was always an Onondaga.

Next west were the Cayugas, the "Youngest Brother," who were in close alliance with the Senecas, or "Keepers of the Western Door." Although the latter were by far the most numerous, they were not held in great respect and never swayed the decisions of the Council of the Long House as did the fierce Mohawks and the lordly Onondagas.

This organization was undoubtedly maintained for 300 years before it was finally broken up by the onward march of a greater civilization. In later years, having admitted the Tuscororas, the league was known as the Six Nations. Several tribes of lesser importance lived within the present boundaries of New York. Among these were the "River Indians," of which the most important were the Mohegans, or Mohicans, who owned much of the eastern bank of the Hudson. Those on the west bank were known to the Dutch as "Mincies." Both the Mohicans and the Mincies were divided into numerous small tribes. South of these were the Manahatas, the Tappans, the Hobokens, the Sing-

sings, and the many Long Island tribes, the general name of which was Matawacas.

After 1664, when the English assumed control of the colony of New York, the Iroquois came to fear that the French would make serious encroachments upon their territory, and turned to New York for assistance. At Albany, in 1684, a treaty was held, in which the Indians asked for protection from the French. From this time dated the formal English claim of lordship over the Iroquois and their lands.

EXPLORATION AND SETTLEMENT

The year 1609 witnessed two important events in the history of New York State — the expedition of Champlain and the explorations of Hudson. On the policy adopted by these two leaders in their treatment of the Indians depended the fate of the early settlements attempted by the French and the Dutch within the state. As a result, therefore, the first permanent settlements were made by the Dutch, who established trading posts at Albany, Rondout, and New York. After a profitable business in fur trading had been carried on for about ten years, Holland made an agreement with a company of "Walloons," or French-speaking Protestants, to become the first colonists in the new country. A few settled on Manhattan Island and a few in Connecticut and in New Jersey; but the greater number were taken at Albany, where the chief settlement, known as Fort Orange, was made.

Some years later the plan of patroonship settlement was proclaimed, whereby the amount of land included in a grant was proportionate to the number of families that were induced to settle the estate. In return the proprietor was to have almost unlimited rights of control. Several settlements were begun, of which Van Rensselaerwyck, founded in 1630, was the largest and most important. This settlement included the present Rensselaer County and all the land surrounding Fort Orange. During the period of Dutch government in New Netherlands, settlers from the New England colonies established themselves in Westchester County and on the west end of Long Island.

Meanwhile the French were endeavoring to become established in the northern and central part of the state, and a number of missionary settlements were made. The first white man whom we know to have seen the falls of Niagara was Father Hennepin, a missionary in the company of La Salle. Fort Niagara was built by La Salle near the mouth of the Niagara River, the works being completed in 1679. This fort became the chief outpost of French civilization and the center of trade with the western Indians.

In the time of Louis XIV the Protestants living on the Palatinates bordering the Rhine in Germany were reduced, through wars and persecutions, to poverty and distress. They fled from their homes to England, where they received assistance from Queen Anne and others. In 1708 a small number came to America and settled on the present site of the city of Newburgh. Two years later the second colony, about 3,000 in number, set sail for America. A portion of these settled in the "West Camp," Ulster County, on a tract of 800 acres, and the others, numbering 2,000, in the "East Camp," a tract of 6,000 acres, comprising much of the present town of Germantown, Columbia County. This tract had been purchased from Livingston. It was expected that from the pine trees the colonists would furnish pitch, tar, and turpentine for the use of the Queen's navy. In less than three years the authorities recognized the futility of the project and released the Palatines from their agreement. Many of them left for Schoharie, from which place some went to the Mohawk valley and others to Pennsylvania. For several years after, Palatines continued to arrive in large numbers in both the Hudson and Mohawk valleys, as well as in Pennsylvania.

A large section west of Schenectady was developed under the leadership of Sir William Johnson, who had control of an immense tract of land. Previous to the Revolution he received a grant of a large tract, which made him at that time the largest landowner in the state with the exception of Van Rensselaer. He brought over some fifty families of Scotch Irish and later a number of Germans, all of whom became his tenants. In 1755 he was made general superintendent of Indian affairs for the English in North America, and, owing to his influence, the residents of the valley were able to live their lives in peace for a time. Seeing dissatisfaction growing among the Indians, he made a treaty with more than 3,000 of them at Fort Stanwix in 1768. Just before the Revolution, July 7, 1774, he gathered 600 Indians at Johnstown in an effort to hold them loyal to the colonies. His death occurred a few days later, when his son, Sir John Johnson, was given charge of Indian affairs. From that time, through the influence of Sir John and other prominent Tories, the colonists were deprived of the peace that they had previously enjoyed. After the war the estate of the Johnsons was declared forfeited to the state. It was sold in small portions to settlers who were mostly of Dutch extraction, residents of Albany, Schenectady, and the lower Mohawk valley.

Despite a promise made the provincials by chiefs of the Six Nations in a council held at German Flats, Herkimer County, at the beginning of the Revolution, to remain neutral during the war, the Iroquois, with the exception of the Oneidas and Tuscaroras, were merciless in their ravages among the frontier settlements. An attempt to check these depredations led to the expedition of Sullivan, through which the colonists became acquainted for the first time with the fertile lands of central New York. Sullivan's forces defeated the enemy near Elmira; then, marching northward through the villages in Livingston County to Canandaigua, they destroyed everything belonging to the Indians on the route.

As the grant of land made by the English Government to New York covered a portion of the grant made to Massachusetts, a compromise was effected in 1786 which gave Massachusetts the right of purchasing from the Indians practically the whole of New York west of Seneca Lake with the exception of a strip one mile in width along Niagara River. The Genesee country, as it was called, included more than 6,000,000 acres. This immense tract was sold by Massachusetts to Messrs. Phelps and Gorham for $1,000,000. Being unable to meet their payments, they surrendered the greater part of the purchase and sold the remainder, 1,200,000 acres, to Robert Morris of Philadelphia, the great financier of the Revolution. This tract included the present counties of Ontario, Yates, and Steuben, and large portions of Wayne, Monroe, Schuyler, Allegany, Chemung, and Livingston, and was bounded on the east by the Pre-emption Line. Morris also contracted with Massachusetts for her pre-emption right to the lands west of the Phelps and Gorham purchase and sold off several tracts, extinguishing the Indian title at the treaty of Big Tree, now Geneseo, in 1797. One of these sales was made to the Holland Land Company and covered about 3,600,000 acres, including the present counties of Chautauqua, Cattaraugus, Allegany, Wyoming, Erie, Genesee, Orleans, and Niagara. The first land office of the company was opened in Batavia in 1801.

Another tract granted by New York to Massachusetts was known as the "Boston Ten Towns," and is now included in the counties of Broome and Tioga. This tract was sold to John Brown and others.

The line of pre-emption was originally very uncertain in the vicinity of Seneca Lake. For this reason Phelps and Gorham agreed with Reed and Ryckman, two Indian traders who had secured a patent of 16,000 acres along the lake, to fix the line. The survey was highly favorable to the traders but disappointing to Phelps and Gorham, who, when they sold to Robert Morris, specified in their deed a tract in a gore between that line and the west bounds of the military tract. When Morris sold, a new line was run, which became known as the "New Pre-emption Line," and was adopted as the true line of division between the claims of the two states. New York State had permitted land warrants to be located on disputed territory, under the impression that the first line was correct; hence the addition to the military tract of what were called "Compensation Lands," in what is now Wayne County.

In 1782 the legislature set apart the "Military Lands" to be granted to the officers and soldiers of New York who should serve in the army until the end of the war. These tracts contained about 1,800,000 acres and included, generally speaking, the counties of Onondaga, Cortland, Cayuga, Tompkins, and Seneca and parts of Oswego and Wayne. The military lot called for tracts one mile square, the state reserving the right to retain 100 acres from the southeast corner of each lot and donate a similar amount of Ohio land. This lot as reserved was called the "State's Hundred." If the purchaser of a lot decided to keep the entire tract he gave due notice to that effect and paid $8 for the survey.

But little was known regarding the country in the northern part of the state until after the Revolution, with the exception of the land bordering Lake Champlain and the St. Lawrence River. Small parcels of land along Lake Champlain had been granted to English officers who served during the French and Indian War. In order to promote settlement of the state, the legislature passed an act in 1786 for "the speedy sale of the unappropriated lands of the state." Under this act the "ten towns" along the St. Lawrence were surveyed and sold. The principal purchaser was Alexander Macomb, a fur trader, who afterward contracted for the largest grant of land ever made by the state of New York to citizens. This grant included 3,693,755 acres and extended over the greater part of Franklin, St. Lawrence, Jefferson, Lewis, and Oswego counties, also a portion of Herkimer County. It was later sold off in smaller parcels, Samuel Ogden and Gouverneur Morris being among the purchasers. David Parish was also active in developing the resources of northern New York. The remainder of the northern section was granted mostly in small patents.

During the first forty years that New York was under the control of the English the population increased but slowly. Under Stuyvesant the colonists had numbered about 12,000 and forty years later it was estimated that the population had increased to only about 20,000. After that time, with easier conditions of living and added privileges of self-government, a rapid growth began, and in 1773, two years before the Revolution, there was a population of about 182,000.

In 1683 the first counties of New York were formed — twelve in number, two of which were outside the present limits of the state. The ten at present forming a part of the state were Kings, Queens, Suffolk, Richmond, New York, and Westchester, besides four "upstate" counties, the limits of which were not clearly defined. Dutchess and Orange, meaning the scantily settled regions on the east and west banks of the Hudson, were named as counties but, having so few people, were given no representation in the assembly. Ulster County was the thickly settled Esopus or Kingston region, and Albany County included everything above that on both sides of the river and extending indefinitely north and west. In 1686, New York City received a charter from the English such as she had previously held under Stuyvesant; Albany also obtained a city charter. These two cities, therefore, antedate all others in the United States by nearly half a century.

STRUGGLE FOR INDEPENDENCE

Democracy sprang suddenly into life in New York in 1641, when Governor William Kieft, in order to protect himself and the colonists from the Indians, summoned a meeting and asked for advice. The meeting promptly elected twelve of the chief citizens to take such action as seemed necessary. After a few months had passed, during which the twelve men made a vigorous protest against several injustices, Kieft dismissed the council from office.

As the next governor, Peter Stuyvesant, preferred to follow his own judgment in the management of affairs, there was a continuous struggle between him and the colonists, who insisted as they had before on sharing in their own government. When Stuyvesant found taxes necessary he finally consented to the election of eighteen men, from whom he chose a council of nine. This was made a permanent council.

Under the rule of the early governors, both Dutch and English, the colonists slowly but surely came to realize their need for self-government and their power in resistance to tyranny. Their long-continued protests through several administrations eventually resulted in bringing them, with the arrival of the English Governor, Colonel Thomas Dongan, a charter giving the privilege of electing an assembly. This body met in New York City, October 17, 1683. In return for the freedom that had been granted the colony the assembly voted to pay increased taxes. This assembly was convened for three successive years, when the charter was recalled.

In 1691, under Governor Henry Sloughter, the source of our present government was established, with three divisions. The people once more elected their assembly, which was given the power to make laws and lay taxes. When Governor Cornbury, who ruled from 1702 to 1708, endeavored to make money by laying taxes of his own, a resolute protest was sent to Queen Anne, and New York became the first American colony to maintain definitely her right of self-taxation. The struggle for this principle continued until the time of the Revolution, under varying degrees of self-government, the greatest freedom being secured under the leadership of Governor DeLancey.

The territory occupied by New York, because of its geographical position, was constantly under active dispute during the early wars, and the colonists suffered greatly. Several times the colony was garrisoned by large bodies of British troops. In spite of these facts New York stood forth boldly, often alone, in her resistance to British authority.

In 1765 the assembly appointed a committee to invite the other colonies to join in a plan for a united protest against the Navigation Laws. The passage of the Stamp Act hastened the action of the committee, and a congress of the various colonies met in New York City, where a formal declaration of rights and grievances drafted by Robert Livingston was passed. On the refusal by New York to submit to the Stamp Act, England repealed the law. Amidst great rejoicing in New York City, a "liberty pole" was erected, in the defense of which, shortly afterward, the first blood of the Revolution was shed, preceding the more famous Boston massacre by six weeks.

At Philadelphia, in 1774, the second Continental Congress adopted a Declaration of Rights, which was written largely by one of the foremost men in New York, John Jay. Philip Livingston, another New York patriot, was one of the committee of three appointed to draw up the act. As difficulties became more acute, the New York Provincial Congress was called, which met in New York City in 1775. This marks the beginning of New York as an independent state.

IMPROVEMENTS IN TRANSPORTATION

The facilities for transportation in the early days of the settlement of this country were generally confined to the primitive methods of journeys on foot, or journeys by water as far as the streams would permit and the carrying of boat and goods across the land to the next stream. After clearings had been made, crude roads were gradually opened for the passage of teams and wagons.

Soon after the Revolution a road following the old Indian trail was opened from near Utica to Canandaigua, and emigration set in toward the western part of the state. This road was afterward continued to Buffalo, and is now an excellent state road.

Fulton's invention of the steamboat in 1807 at once made the rivers our chief highways; and, since produce could not be profitably marketed, sections remote from the principal streams developed but slowly. Then came the War of 1812, during which settlement was checked. At its close both state and private funds were sent to aid the ruined frontier settlements as a response to the first wide appeal for charity in New York State.

In 1816 the "Ridge road" was opened, and a long, slender line of settlements sprang up across the counties on the south shore of Lake Ontario. Increasing demands for improved transportation led to the building of the Champlain and Erie canals, which were completed in 1823 and 1825, respectively. The growth of villages all along the canals received a remarkable impetus, and farm products in western New York doubled in value.

As an evidence of the rapidity with which the Erie Canal was brought into use and of the great change in transportation wrought by it, particularly with respect to freight, it may be stated that the number of canal boats arriving in Albany during the season of 1823 was 1,329; in 1824 it was 2,687; and by 1826 it had increased to about 7,000. The effect of the canal on farming was marked by a gradual change in the products to which farmers gave the most of their attention. The easterly route for marketing western products now being open, eastern farmers found it necessary to turn their attention to the raising of crops not so much affected by western competition.

Close on the completion of canals followed the building of railroads, the first being finished in 1831 between Albany and Schenectady. This was the second railroad in the United States, South Carolina having completed a six-mile road a year previous. Within the next twenty years the Erie Railroad was built, followed closely by the New York Central, thus connecting Lake Erie with the ocean by rail as well as by the great canal.

An interesting fact concerning the old Indian trails is that even our modern road makers have been unable to make many improvements either in the way of shortening the distance or in securing a better grade. As a consequence, the railroads of the state, with a few exceptions, follow quite closely the original trails.

PROGRESS OF INDUSTRY

The water power of the numerous streams of the state was utilized as early as the settlers were able to construct their rude homes, plant their small crops, and build mills. A number of grist mills and saw mills sprang up at an early date. Asheries and tanneries were common in many places until the destruction of the forests made them unprofitable. On account of the cost of carrying grain to the markets, distilleries were also built at an early date. In the more remote sections, especially in the northern and western portions of the state, the production of ashes or black salts were almost the only products for which cash could be obtained, and payment for goods purchased was usually made in products of the farm.

Since the country was covered with forests, lumbering or the production of black salts was generally the chief occupation until the land had been cleared. When the land was put under cultivation, grain, hay, and potatoes were the principal crops, accompanied by the raising of live stock to some extent. The raising of cattle gradually became prominent in the northern, central, and western portions, and, while the dairy industry is of great importance throughout the state, it is particularly prominent in those sections at the present time.

DAIRYING

Until recent years most of the milk furnished for the city of New York was principally supplied from the near-by counties, including Orange, Dutchess, Sullivan, Ulster, Columbia, Greene, and Delaware, as well as those on Long Island. The milk produced in the other sections of the state was nearly all manufactured into butter and cheese. In 1870 New York produced more butter and cheese than all the rest of the states in the Union.

Later in the development of the dairy industry a number of condensaries were established in the dairy sections of northern, central, and western New York.

As New York City increased in population and there came a demand for a greater supply of milk, the territory supplying the city was enlarged, extending farther throughout the state from year to year, until at present New York City receives milk from all the milk-producing counties of the state. Trains leaving western New York one day reach New York City the following morning; the same is true of northern New York, each section being about 400 miles distant. As the demand for market milk increased there arose also a greater demand for condensed and evaporated milk. At about the year 1904 powdered milk was introduced. The growing use of these manufactured products, together with the increased demand for liquid milk for city consumption, requires at the present time nearly all the milk produced in the dairies in the state of New York, with the exception of a few months in summer, when the surplus milk is manufactured into cheese and butter. The result has been that the cheese factories and creameries, which at one time handled the greater part of the milk in the state, have grown less in number with each year. While in 1900 there were 1,200 cheese factories, there are at present only about 600 cheese factories, besides about 200 creameries, including butter factories; the condensaries have increased to approximately sixty in number and the milk stations, milk platforms, and skimming stations have increased to approximately 700. There are also about ten powdered milk plants.

The cheese and butter factories that operate mostly during the summer months are located principally in the counties of St. Lawrence, Jefferson, and Lewis in northern New York; Oneida, Madison, Herkimer, and Otsego in central New York, and Cattaraugus, Allegany, Wyoming, Steuben, Erie, and Chautauqua in western New York.

When the greater part of the milk produced in the state was handled by the cheese and butter factories, the whey and skim milk were utilized in raising hogs and calves. So many cheese factories having since been replaced by condensed and powdered milk plants, and large quantities of the liquid milk produced now being required for use in the cities, the farmers are no longer supplied with these by-products, and the business of raising calves and hogs has greatly decreased. As a result, most dairy farmers are at present raising only the hogs that are needed for their family use, and comparatively few calves.

FRUITS AND VEGETABLES

Even before white men arrived in this country the native Indians cultivated fruits and vegetables, the latter including beans, squashes, pumpkins, cucumbers, and watermelons. The writings of Jesuit missionaries in the last half of the seventeenth century refer frequently to apples, plums, cherries, and berries of various kinds along Lake Ontario and in the St. Lawrence valley. Peaches and apples are mentioned as growing near Fort Orange, or Albany. Sullivan relates that in his expedition he found growing and destroyed extensive orchards, one of 500 trees in Cayuga County, and another in Seneca County of 15,000 trees. It is not surprising, therefore, that fruit raising received considerable attention in the central and western portions, as well as in the Hudson River valley, at an early date. Orchards were also cultivated on Long Island. The grape industry was first begun on an extensive plan in Steuben County near Keuka Lake at about 1835. Some years later it made a rapid development in Chautauqua County along Lake Erie, and has now reached immense proportions in both localities.

As the increasing growth of villages and cities brought about a greater demand for vegetables, the business of gardening assumed larger and larger proportions near the centers of population. Potatoes were very generally raised, those produced in the northern part of the state being largely used in the manufacture of starch. The appearance of the potato bug and the blight have led to a great reduction of the crop in some sections.

MISCELLANEOUS PRODUCTS

Flax, hemp, and tobacco were among the early products, flax being produced most largely in the counties of Rensselaer, Washington and Columbia. Cotton was raised to a very limited extent on Long Island. Broomcorn was grown on the flats along the

Mohawk. Wayne County was once celebrated for its production of peppermint oil, being one of a very few sections in the United States engaged in its production. With the exception of tobacco, all these crops have now been superseded by other more profitable ones. At the present time five counties produce the greater part of the tobacco raised in this state, ranking in the following order: Onondaga, Chemung, Cayuga, Wayne, and Oswego.

Hops were raised for a time, to a limited extent, at least, in nearly all sections of the state. In 1880 New York State produced more hops than all other states combined. Their production was greatest in the central part, principally in Otsego, Madison, Schoharie, and Oneida counties. Since then, attention has been quite generally diverted to other crops, although there are still a few large growers in the business.

Maple sugar, which is still largely produced in some of the remaining forest-covered sections, has become a much less important product than was formerly the case.

Teasels and willows are profitably grown in certain sections of Onondaga County.

The violet industry is of considerable importance in the vicinity of Rhinebeck, Dutchess County. The industry is also prominent near Tarrytown, Westchester County.

PRESENT-DAY AGRICULTURE

Although New York by no means equals in size many other states in the Union, she may justly be proud of her rank as an agricultural state. There is perhaps no state that has a greater variety of products. For many years New York took first place in the dairy industry, but at the present time Wisconsin claims to own a greater number of dairy cows. New York still leads in the value of dairy products, which in 1918 was approximately $208,000,000, or a little more than one-fourth the total value of agricultural products of the state. New York leads in the production of apples, buckwheat, and potatoes; the state also ranks first in the value of vegetables produced (excluding potatoes), as well as in the value of hay and forage and of small fruits.

The following tables show the production of some of the more important agricultural crops in the state, as given in the United States Census of 1910 and in the census of 1917 and that of 1918:

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	22,030,367 acres
Number of farms	215,597
Per cent of farm land improved	67.4

LIVE STOCK PRODUCTS

Milk sold	524,279,723 gal.
Cream sold	1,207,174 gal.
Butter fat sold	36,249,617 lbs.
Butter produced	23,461,702 lbs.
Cheese produced	390,049 lbs.
Eggs produced	67,688,879 doz.
Wool produced	573,611 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	591,008
Cattle	2,423,003
Sheep	930,300
Swine	666,179
Poultry	10,678,836

BEES

Number of colonies	156,360

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	512,442	18,115,634
Oats	1,302,508	34,795,277
Wheat	289,130	6,664,121
Barley	79,956	1,922.868
Buckwheat	286,276	5,691,745
Rye	130,540	2,010,601

	Acres	Tons
Hay and Forage	5,043,373	7,055,429

Special crops:	Acres	Quantity
Potatoes	394,319	48,597,701 bu.
Vegetables, other than potatoes	175,515	....
Dry edible beans	115,698	1,681,506 bu.
Dry peas	4,007	71,486 bu.

Fruits:		
Apples	11,248,203 trees	25,409,324 bu.
Peaches and nectarines	2,457,187 trees	1,736.483 bu.
Pears	2,141,596 trees	1,343,089 bu.
Plums and prunes	919,017 trees	553,522 bu.
Cherries	673.989 trees	271,597 bu.
Quinces	169,031 trees	132,451 bu.
Grapes	31,802,097 vines	253,006,361 lbs.
Small fruits	22,496 acres	37,857,829 qts.

PRESENT STATUS OF AGRICULTURE *

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	200,903	185,051

---

* Owing to the fact that these figures were compiled with the aid of the schools throughout the state at a time when many of the schools were closed, a number of reports were not available. The following statements, taken from the "Census of the Agricultural Resources of New York," published by the New York State Food Commission, show the probable extent of such omissions:

Regarding the enumeration in 1917, "Probably 5 per cent should be added to all figures as reported to cover omissions and counties that were not included."

"To cover all omissions and the counties that were not enumerated it is possible that 10 to 13 per cent should be added to the state totals for the 1918 census."

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	532,716	486,193
Cattle	2,209,094	2,048,115
Sheep	610,490	514,816
Swine	444,367	398,083
Poultry	11,851,536	9,101,017

BEES

Colonies	122,268	130,954

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	341,931	327,509	6,780,353 bu.
Oats	1,120,565	1,083,646	29,916,905 bu.
Barley	95,189	102,297	2,076,644 bu.
Buckwheat	263,667	269.138	3,488,309 bu.
Wheat (winter)	351,225	351,594	7,229,689 bu.
Wheat (spring)	12,536	26,821	339,664 bu.
Rye	118,176	111,458	1,610,075 bu.
Hay and Forage:			
Alfalfa	163,150	146,221	323,261 tons
Other hay	4,140.489	3,970,379	5,253,923 tons
Corn (ensilage)	365,990	321,926	2,085,296 tons
Corn (fodder)	....	112,511	....
Special Crops:			
Field beans	198,309	218,742	1,477,061 bu.
Cabbage	41,668	47,344	330,038 tons
Potatoes	309,213	348,269	29,359,635 bu.
Roots raised for stock food	....	18,032	....
Canning factory crops	44,661	43,608	....
Other vegetables and garden crops	64,858	84,624	....
Fruits:			
Apples	342,243	385,737	8,994,136 bu.
Peaches	50,050	53,470	3,250,379 bu.
Pears	37,187	41,031	1,646,947 bu.
Plums	8,733	10,249	3,779,099 lbs.
Cherries	12,959	12,989	8,689,203 lbs.
Quinces	....	3,277	113.834 bu.
Vineyard	54,020	56,126	98,451,910 lbs.
Small fruits	28.841	32.893	....

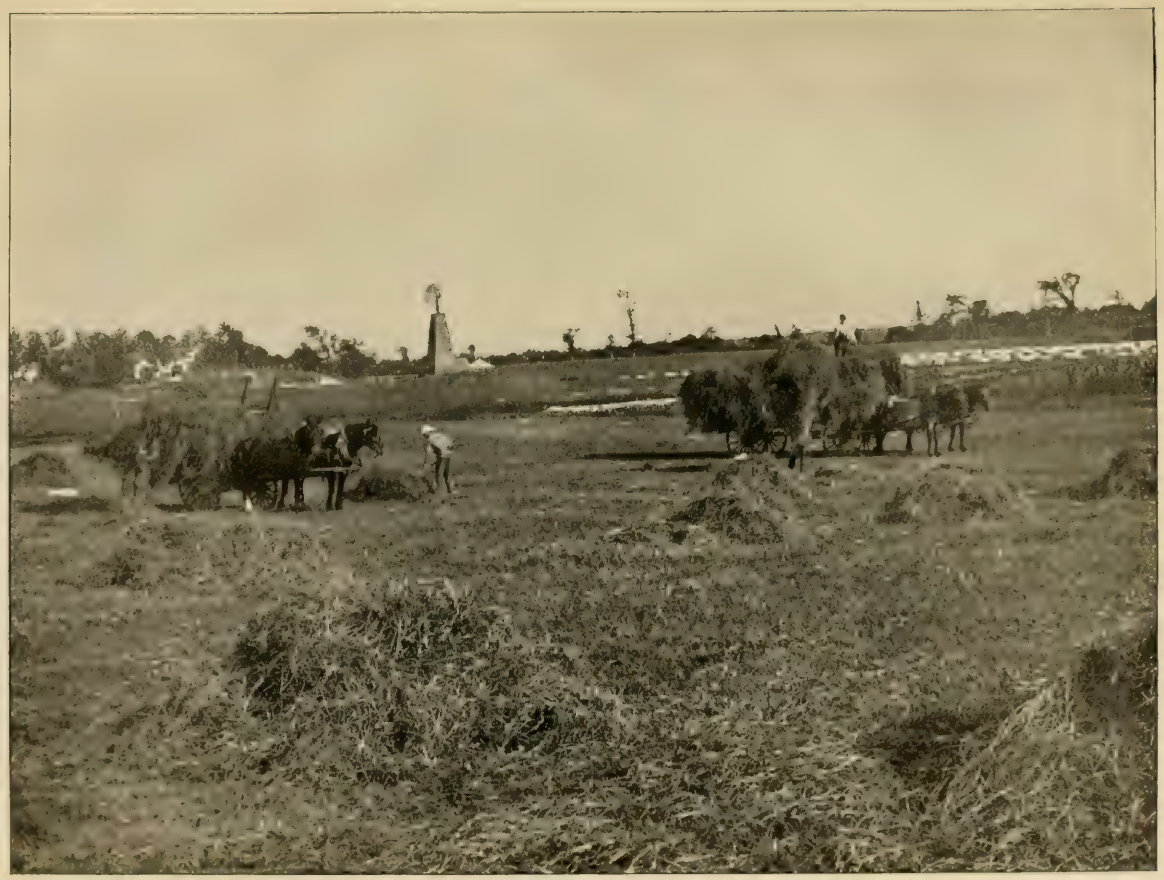


FIG. 21.—ALFALFA GROWS READILY IN NEW YORK STATE

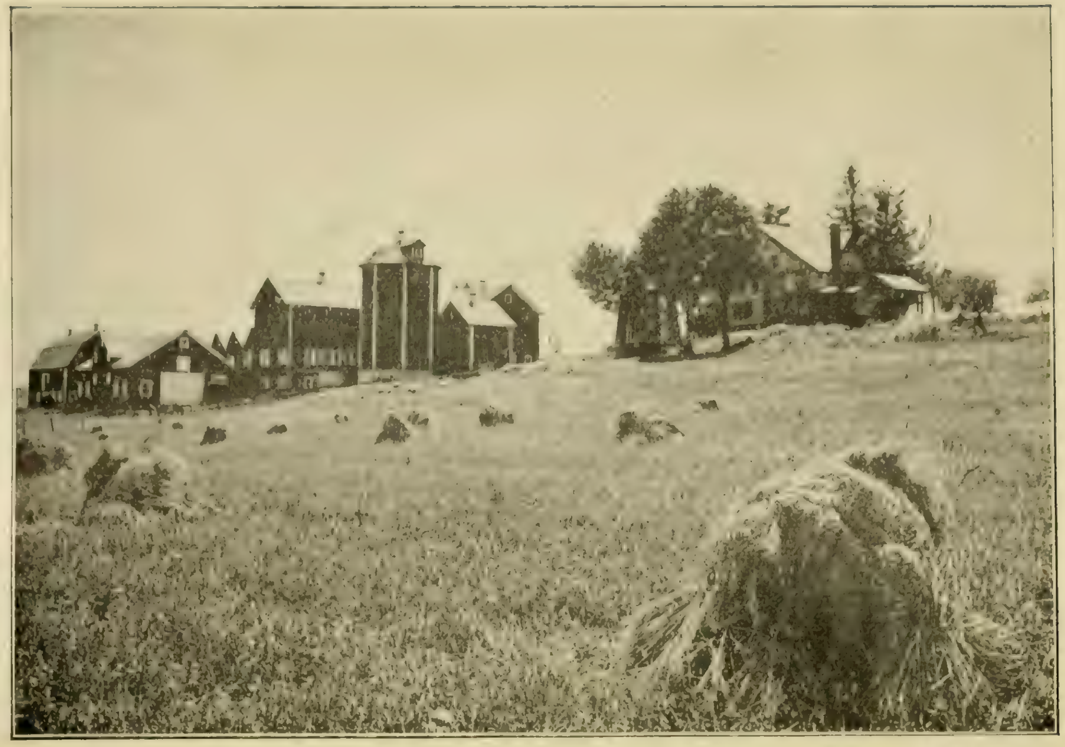


FIG. 22.—THE OATS CROP OF NEW YORK STATE LEADS IN ACREAGE AMONG THE GRAINS

CEREALS

The chief grain crop of the state is that of oats, in the production of which Jefferson County takes the lead, followed by Steuben and St. Lawrence. Wheat is grown most largely in the counties of the lake plain, Monroe and Livingston heading the list. In the production of corn Suffolk County, which grows a large quantity of seed corn, stands first. This grain is raised most largely in the lake plains and in the Hudson River valley, Ontario and Dutchess leading in these two sections. The lake plains also produce the greatest amount of barley, with Cayuga and Ontario heading the list. Rye is grown most extensively in the Hudson River valley and in the lake plains, Rensselaer, Columbia, and Albany counties ranking first. Cayuga leads in the amount of buckwheat produced. With this exception buckwheat is raised most largely in the western part of the Allegheny plateau.

HAY

In the production of hay, not including alfalfa, St. Lawrence, Jefferson, and Oneida counties take the lead in New York State. It is also raised extensively throughout the Allegheny plateau region. Onondaga excels the other counties of the state in the production of alfalfa, with a yield more than twice as great as Madison, which ranks second. The counties in the plains south of Lake Ontario produce a crop ranking next in importance.

VEGETABLES

Nine counties of the state have a yield of more than 1,000,000 bushels of potatoes, Suffolk leading with a production of over 3,000,000 bushels. Monroe and Steuben stand next in rank, each with a yield of about half that amount. In vegetable and garden crops, Suffolk is again far in the lead, with an acreage of about twice that of either Erie, Orange, or Wayne.

Canning factory crops are most largely raised in the central and lake plains counties, with Oneida, Livingston, and Orleans standing first in the state.

The two most important sections in the production of cabbage are on Long Island and in the plains south of Lake Ontario. The greatest yield is found in the counties of Ontario and Suffolk.

Field beans are largely raised in the western part of the state, especially in the counties of Livingston, Wyoming, and Genesee.

Five counties produce the greatest part of the tobacco raised in the state, ranking in the following order: Onondaga, Chemung, Cayuga, Wayne, and Oswego.

FRUIT

Fruit is most extensively raised in the plains near Lakes Erie and Ontario and the Finger Lakes, and in the central Hudson valley. Niagara, Wayne, and Monroe have the largest acreage. According to the census of 1918, Columbia and Dutchess lead in the production of apples, followed by Orleans, Monroe, and Niagara.

In the production of peaches Niagara stands well in the lead, with a yield of more than twice as many as any other county. Next to the peach belt on the southern shore of Lake Ontario come the counties of Ulster and Orange in the Hudson valley. A considerable quantity is also raised in Suffolk County.

Pears are most largely raised in the four western counties of the plain south of Lake Ontario, Monroe taking first place in their production. Ulster, Columbia, and Albany lead in the Hudson River belt.

By far the greatest production of plums is obtained in the counties of the lake plains, Monroe, Orleans, and Ontario standing well in the lead, and Albany fifth in the list.

Both Niagara and Wayne counties report a yield of cherries of more than 2,000,000 pounds, Monroe ranking third in the state. In the Hudson valley fruit belt Columbia County ranks first.

Quinces are produced principally in the lake belt, Niagara taking the lead.

The three most extensive grape sections lie along Lake Erie, around the Finger Lakes, and in the Hudson River valley. The three leading grape-producing counties in the state are Chautauqua, Yates, and Ulster, representing the three grape sections.

The sections most largely devoted to raising small fruits are represented by Erie, Ulster, and Monroe, these three counties having the greatest production in the state.

LIVE STOCK

The principal cattle-raising sections lie in the northern part of the state and in the Allegheny plateau, St. Lawrence, Delaware, and Jefferson counties having the largest number.

The greatest number of sheep are found in Livingston, Ontario, and Orleans counties, the other largest sheep-raising counties, with the exception of Washington, bordering the three counties mentioned.

St. Lawrence, Monroe, and Erie lead in the production of swine, which are largely raised also in Oneida and Jefferson counties and in other sections in the central and western parts of the state.

Poultry raising is extensively followed in various sections, the counties of Erie and Chautauqua leading in this industry.

The list following show the counties of the state leading in various kinds of products, with the amount of their production, according to the census of 1918:

COUNTIES LEADING IN YIELD OF OATS

(1,000,000 or more bushels)

	Bushels
1. Jefferson	2,495,955
2. Steuben	1,724,447
3. St. Lawrence	1,666,921
4. Monroe	1,242,982
5. Erie	1,197,079
6. Ontario	1,048,367

COUNTIES LEADING IN YIELD OF WHEAT

(300,000 or more bushels)

	Bushels
1. Monroe	852,384
2. Livingston	835,787
3. Ontario	688,546
4. Genesee	583,934
5. Cayuga	510,689
6. Wayne	492,084
7. Orleans	468,694
8. Niagara	448,435
9. Seneca	390,270
10. Wyoming	311,572
11. Yates	311,566

COUNTIES LEADING IN YIELD OF CORN

(200,000 or more bushels, shelled)

		Bushels
1.	Suffolk	746,531
2.	Ontario	415,626
3.	Dutchess	360,008
4.	Cayuga	325,116
5.	Wayne	298,784
6.	Orange	294,229
7.	Washington	288,033
8.	Onondaga	281,008
9.	Columbia	243,011
10.	Ulster	233,002

COUNTIES LEADING IN YIELD OF BUCKWHEAT

(100,000 or more bushels)

		Bushels
1.	Cayuga	237,503
2.	Steuben	223,425
3.	Chautauqua	164,564
4.	Erie	151,938
5.	Cattaraugus	132,542
6.	Tompkins	120,580
7.	Schoharie	118,738
8.	Allegany	108,875
9.	Delaware	107,310
10.	Tioga	104,263
11.	Albany	100,314

COUNTIES LEADING IN YIELD OF BARLEY

(100,000 or more bushels)

		Bushels
1.	Cayuga	263,668
2.	Ontario	227,581
3.	Onondaga	176,309
4.	Monroe	120,755
5.	Genesee	118,764
6.	Orleans	115,798

COUNTIES LEADING IN YIELD OF RYE

(50,000 or more bushels)

		Bushels
1.	Rensselaer	243,387
2.	Columbia	174,075
3.	Albany	124,512

		Bushels
4.	Livingston	77,141
5.	Monroe	66,429
6.	Steuben	64,616
7.	Saratoga	63,663
8.	Washington	54,712
9.	Dutchess	53,024
10.	Ulster	52,164
11.	Ontario	50,123

COUNTIES LEADING IN YIELD OF BEANS

(50,000 or more bushels)

		Bushels
1.	Livingston	325,245
2.	Wyoming	200,949
3.	Genesee	101,158
4.	Wayne	86,105
5.	Ontario	82,353
6.	Yates	70,442
7.	Schuyler	59,650
8.	Allegany	50,737

COUNTIES LEADING IN YIELD OF ALFALFA

(10,000 or more tons)

		Tons
1.	Onondaga	79,382
2.	Madison	31,295
3.	Cayuga	24,502
4.	Ontario	19,155
5.	Livingston	16,735
6.	Oneida	15,060
7.	Monroe	14,070
8.	Genesee	13,791
9.	Wayne	11,028

COUNTIES LEADING IN YIELD OF HAY, NOT INCLUDING ALFALFA

(150,000 or more tons)

		Tons
1.	St. Lawrence	311,106
2.	Jefferson	257,514
3.	Oneida	226,700
4.	Delaware	223,899
5.	Otsego	169,650
6.	Chenango	165,668
7.	Steuben	165,569
8.	Allegany	164,167
9.	Erie	160,825
10.	Cattaraugus	156,496
11.	Chautauqua	151,158

COUNTIES LEADING IN YIELD OF CABBAGE

(10,000 or more tons)

		Tons
1.	Ontario	57,828
2.	Suffolk	29,702
3.	Onondaga	27,784
4.	Nassau	21,717
5.	Monroe	20,500
6.	Wayne	18,166
7.	Cayuga	10,790

COUNTIES LEADING IN YIELD OF POTATOES

(1,000,000 bushels or more)

		Bushels
1.	Suffolk	3,395,290
2.	Monroe	1,546.098
3.	Steuben	1,514,641
4.	Onondaga	1,232,432
5.	Erie	1,163,359
6.	Franklin	1,148,625
7.	Oneida	1,086,570
8.	Clinton	1,060.957
9.	Ontario	1,027,372

COUNTIES LEADING IN YIELD OF CANNING FACTORY CROPS

(2,000 or more acres)

		Acres
1.	Oneida	5,098
2.	Livingston	4,782
3.	Orleans	4,073
4.	Wayne	3,803
5.	Madison	2,832
6.	Erie	2,716
7.	Monroe	2,457
8.	Niagara	2,256
9.	Ontario	2,141
10.	Genesee	2,094

COUNTIES LEADING IN ACREAGE OF VEGETABLES AND GARDEN CROPS

(2,000 or more acres)

		Acres
1.	Suffolk	9,280
2.	Erie	4,961
3.	Orange	4,584
4.	Wayne	4,169
5.	Nassau	3,732
6.	Albany	3,696
7.	Chautauqua	3,377
8.	Monroe	2,974
9.	Onondaga	2,589

		Acres
10.	Oneida	2,471
11.	Oswego	2,214
12.	Madison	2,086
13.	Ulster	2,077

COUNTIES LEADING IN ACREAGE OF FRUIT
(15,000 or more acres)

		Acres
1.	Niagara	55,048
2.	Wayne	50,549
3.	Monroe	44,669
4.	Orleans	34,810
5.	Chautauqua	32,604
6.	Ulster	24,402
7.	Erie	24,012
8.	Ontario	21,734
9.	Columbia	20,080
10.	Dutchess	17,240
11.	Yates	15.542

COUNTIES LEADING IN YIELD OF APPLES
(200,000 or more bushels)

		Bushels
1.	Columbia	1,114,918
2.	Dutchess	797,415
3.	Orleans	646,304
4.	Monroe	470,814
5.	Niagara	417,638
6.	Greene	394,283
7.	Ulster	385,723
8.	Wayne	352,904
9.	Ontario	311,992
10.	Yates	252,279
11.	Albany	233.893

COUNTIES LEADING IN YIELD OF PEACHES
(20,000 or more bushels)

		Bushels
1.	Niagara	1,351,787
2.	Orleans	649,289
3.	Monroe	602,738
4.	Wayne	219,487
5.	Ulster	110,398
6.	Orange	78,016
7.	Suffolk	33,264
8.	Westchester	27,625
9.	Ontario	24,471
10.	Seneca	20,323
11.	Dutchess	20,086

Counties Leading in Yield of Pears
(20,000 or more bushels)

		Bushels
1.	Monroe	368,145
2.	Niagara	292,379
3.	Orleans	194,133
4.	Wayne	123,606
5.	Ulster	94,886
6.	Columbia	87,178
7.	Albany	72,467
8.	Oswego	60,001
9.	Greene	52,937
10.	Ontario	43,311
11.	Genesee	28,371
12.	Rensselaer	27,395
13.	Orange	26,025
14.	Dutchess	20,396

Counties Leading in Yield of Plums
(100,000 or more pounds)

		Pounds
1.	Monroe	835,393
2.	Orleans	713,831
3.	Ontario	623,728
4.	Wayne	243,820
5.	Albany	132,091
6.	Livingston	113,970
7.	Niagara	105,512

Counties Leading in Yield of Cherries
(Approximately 100,000 or more pounds)

		Pounds
1.	Niagara	2,375,902
2.	Wayne	2,326,281
3.	Monroe	895,070
4.	Columbia	625,193
5.	Orleans	480,089
6.	Ontario	406,583
7.	Chautauqua	250,419
8.	Ulster	221,894
9.	Onondaga	172,953
10.	Orange	99,955

Counties Leading in Yield of Quinces
(5,000 bushels or more)

		Bushels
1.	Niagara	71,489
2.	Orleans	17,353
3.	Monroe	8,203
4.	Wayne	6,944

Counties Leading in Yield of Grapes

(1,000,000 or more pounds)

		Pounds
1.	Chautauqua	45,496,000
2.	Yates	11,579,520
3.	Ulster	8,815,631
4.	Erie	6,790,424
5.	Steuben	4,845,608
6.	Cattaraugus	4,066,000
7.	Niagara	3,479,616
8.	Ontario	3,148,732
9.	Schuyler	2,942,406
10.	Columbia	2,089,460
11.	Orange	1,498,385

Counties Leading in Small Fruits

(1,000 or more acres)

		Acres
1.	Erie	3,978
2.	Ulster	3,663
3.	Monroe	2,247
4.	Ontario	1,766
5.	Niagara	1,636
6.	Chautauqua	1,498
7.	Wayne	1,443
8.	Oswego	1,160
9.	Columbia	1,157
10.	Yates	1,146
11.	Albany	1,136

Counties Leading in Number of Cattle

(50,000 or more)

		Number
1.	St. Lawrence	141,629
2.	Delaware	106,575
3.	Jefferson	98,237
4.	Oneida	83,381
5.	Cattaraugus	82,225
6.	Otsego	68,448
7.	Chautauqua	67,588
8.	Chenango	65,761
9.	Steuben	57,375
10.	Allegany	56,326
11.	Lewis	54,652
12.	Erie	54,450
13.	Orange	52,805
14.	Oswego	52,120
15.	Madison	51,288

COUNTIES LEADING IN NUMBER OF SHEEP

(20,000 or more)

		Number
1.	Livingston	45,175
2.	Ontario	35,219
3.	Orleans	34,338
4.	Genesee	32,630
5.	Wyoming	29,643
6.	Steuben	27,078
7.	Washington	21,613
8.	Yates	20,202

COUNTIES LEADING IN NUMBER OF SWINE

(10,000 or more)

		Number
1.	St. Lawrence	17,856
2.	Monroe	15,886
3.	Erie	14,828
4.	Oneida	14,055
5.	Jefferson	13,643
6.	Wayne	13,550
7.	Ontario	13,049
8.	Cayuga	12,617
9.	Onondaga	12,536
10.	Niagara	11,345
11.	Steuben	10,459

COUNTIES LEADING IN NUMBER OF POULTRY

(250,000 or more)

		Number
1.	Erie	304,407
2.	Chautauqua	296,046
3.	Otsego	293,642
4.	Wayne	292,425
5.	Ulster	267,795
6.	Cayuga	267,571
7.	St. Lawrence	263,317

FOREST RESOURCES

The forests of New York constitute one of the valuable resources of the state. Originally the state was almost entirely forest-covered, and in many sections lumbering was the leading occupation for many years. At the present time much of the Adirondack section is heavily wooded, although but little of the virgin forest remains. During the year 1917 the lumber sawed in this state amounted to 360,541,000 feet board measure. The amount of round wood consumed was 913,169 cords of 128 cubic feet, which, added to the lumber, makes a total of 861,870,781 board feet. In addition, there were manufactured 10,390,000 shingles, 10,928,000 lath, 52,378,000 heading, 42,378,000 staves, 51,200 poles, and 116,700 posts.

There are in the state 12,000,000 acres of land under forest growth, of which 7,600,000 acres are in forests, including state preserves, and 4,400,000 acres in woodlots. The greater part of these forests are in the Adirondack and Catskill regions, although southern Cattaraugus County is largely forest-covered, and there are many smaller wooded regions in the highlands of the southern and eastern portions of the state.

The counties having the greatest forest growth are Clinton, Delaware, Essex, Franklin, Fulton, Hamilton, Herkimer, Lewis, Oneida, Saratoga, St. Lawrence, Warren, Washington, Greene, Ulster and Sullivan. In a few sections, some of the lands that were cleared have proved unprofitable for cultivation and the forest is again being allowed to take possession.

Generally speaking, soft woods are most abundant in the more elevated portions of the state, while the lower lands abound in hard woods. Following is a list of the trees producing the largest amount of timber in 1917, arranged in order of production: hemlock, pine, maple, beech, spruce, oak, birch, chestnut, basswood, ash, elm, and poplar.

In order that, to a certain extent, the flow of streams may be regulated, thus tending to prevent serious floods and prolonged periods of low water, the state has acquired large tracts in the Adirondack and Catskill forests. Since under the state constitution no wood may be cut on land belonging to the state, its citizens are assured of a permanent forest, which not only affords protection of the water supply, but allows hundreds of people to share in the advantages and pleasures of mountain life.

Reforestation is being practiced in many sections. Owing to recent labor conditions, private landowners have been prevented from following the practice as extensively as has been done in the past. However, the Conservation Commission reports the sale to private owners for this purpose during 1918 of a total of 2,597,785 trees. The commission also reports that, of land belonging to the state, 4,213 acres were reforested during the same year.

MINERALS AND MINING IN NEW YORK STATE

D. H. Newland, Albany, N. Y.

Assistant State Geologist

New York State is richly endowed with subsurface deposits of ores and minerals that, like its soils, yield a wide variety of products. The value of mineral materials taken out each year is well over $50,000,000. This is the sum of about thirty-five different items, in their crude forms mostly, and is well above the average outturn, or even exceeding the production of many states that are more particularly associated in the popular mind with an active mineral industry.

The absence of gold and silver in the list of products is no doubt partly responsible for the tendency to depreciate the importance of mining among the industrial activities of the state. Somehow, the precious metals are the first to be considered in connection with underground explorations. Yet they afford a small, and on the whole a rather unprofitable, basis for industry, requiring the application of the best mechanical equipment and the keenest metallurgical knowledge to extract them successfully from their ores. This applies particularly to gold, which, as a field of activity, is probably the least remunerative of any kind of mining. There is no basis whatever for anticipating that gold, silver, or platinum will ever be obtained in a commercial way from any local deposits, and all the efforts in that direction on which many hundred thousands of dollars have been spent in the last few years are idle, if not to be characterized by harsher terms.

One of the substantial branches of mining that has been carried on in New York for a century and a half, and still has capacity for growth, is that of iron. The ores are widely distributed, including magnetite in the Adirondacks and southeastern Highlands; hematite in central New York, represented by the Clinton beds; and limonite and siderite in Dutchess and Columbia counties. Mine operations are in progress at present in Essex, Clinton, St. Lawrence, Orange, Oneida, and Wayne counties. The output of iron ore in 1917 was 1,356,011 long tons, valued at $7,381,333.

Zinc ore has been mined for the last four or five years in St. Lawrence County, practically a new industry in this region. There are deposits of this ore also in Orange, Sullivan, and Delaware counties that have received some attention but do not attain the importance of those in the western Adirondacks, where the product has reached a value of over $1,000,000 a year on the basis of market value of the contents.

The mining of pyrite for acid manufacture is another St. Lawrence County industry, where it has attained considerable importance. Talc is also mined there on a large scale, the product of ground talc from the Gouverneur district being especially notable, as the article finds its way into all parts of the United States and into foreign countries as a particularly desirable grade. About 75,000 tons of talc are mined each year, worth $10 or more a ton in ground condition.

Probably not many citizens of the state are acquainted with the fact that New York possesses the largest salt mines in the country or that its production of this essential commodity is equivalent to about one-third of all the salt consumed in the United States. Salt making is one of the oldest branches of the mineral industry, carried on continuously since about 1790, when the Onondaga salt springs were first utilized by the white settlers in central New York. The brine salt industry in that section is no longer important, the discovery of the rock salt beds in Onondaga, Genesee, Wyoming, Livingston, Tompkins, and Schuyler counties in the latter decades of the last century having opened the way to the exploitation of these resources. Livingston County produces all the rock salt, which is obtained by underground mining through shafts over 1,000 feet in vertical depth. Elsewhere, the salt is brought to the surface in the form of brines by drilled wells into which fresh waters are introduced and then pumped back after saturation. The salt beds underlie several thousand square miles, constituting one of the great natural resources of the state, whose potential value can hardly be estimated.

Gypsum is found in the same strata as the salt; it is mined mostly in Erie, Genesee, and Monroe counties. The product is converted into stucco or wall plaster, or is sold in crude form for admixture with Portland cement and for use as land plaster in agriculture. The annual outturn is over half a million tons, worth about $2,500,000.

There are no coal beds in this state; the northern limits of the great Appalachian coal fields stop just short of the southern boundary. Oil is found, however, in Allegany, Cattaraugus, and Steuben counties. Natural gas occurs in the same region, as well as in Chautauqua, Erie, Genesee, Monroe, Schuyler, Livingston, Onondaga, Oswego, and other counties. These mineral fuels have an annual value of about $6,000,000.

The clay-working industries and stone quarries are widely represented, with one or more enterprises in nearly every section or district. There is an abundance of limestone suitable for agricultural use, for which the demand has shown an encouraging growth. Granite and marble are quarried in the Adirondack and Highland regions. The combination of limestone and clay, not uncommon in the state, provides the necessary basis for Portland cement manufacture. This business has gained an established place in the last few years, with an average output of 5,000,000 barrels.

The list of minerals as enumerated is far from complete. One of the minor products is apatite, valuable for its phosphoric acid content, which is obtained in connection with the mining of iron ores in Essex County. Emery, diatomaceous earth, quartz, and garnet are produced for abrasive uses. The garnet mines near North River, Warren County, are reputed far and wide for the excellence of their crystal garnet. It is made into abrasive paper, known in the trade as "ruby" paper. Graphite, which is one of the characteristic Adirondack minerals of widespread occurrence, is mined in Essex, Washington, and Saratoga counties. Marl and peat are products of our swamp lands.

Molding sand is a material that, to foundrymen, will no doubt most frequently recall the name Albany in its connection, for much of the high-grade sand used for fine castings is obtained in the Hudson valley, north and south of the capital city. The war brought to light the importance that potash has in relation to agriculture and many chemical industries by the shutting off of foreign supplies. Some of the Portland cement plants are now turning out this substance as a by-product of their operation.

Millstones of wide repute are made in Ulster County. Various mineral paints are produced from iron and lead bases.

One of the most considerable items in the list of minor products is mineral waters, for which some of the New York springs bear an enviable reputation. The existence of such natural waters as those of Saratoga, Ballston, Richfield, and Sharon, to name a few, is a resource that can scarcely be measured in terms of money.

I have given a very hasty summary of some of the important features that characterize the mineral occurrences of the state. They have their limitations, which should be respected, but as a positive resource they afford a wide field for enterprise, which is constantly developing and expanding as new discoveries are made or new uses found for materials already known to exist.

A most essential factor for the future welfare of the industry is the awakening of public opinion in regard to the intelligent utilization of these resources for the general interest and not solely for private gain, which is likely to be the main governing principle. Conservation may be applied to minerals with even more reason than to our forests and soils. Unlike the products of the latter, mineral and ore deposits are an inheritance of past ages during which nature gathered them into their present forms by infinitely slow accretions; hence, once gone, they are beyond restoration. Their waste or misdirected application, therefore, implies not only present loss, but injustice to future generations upon whom will rest the responsibility of maintaining those activities that have been among the bulwarks of our strength and prosperity.

COMMERCIAL FACILITIES

The natural internal navigation of the state is very extensive. Before the commencement of internal improvement, the rivers and lakes formed the easiest means of transportation between distant points of the state, and along these natural channels of commerce the earliest settlements were principally made. When to these natural highways leading across the state to the great lakes is added the harbor of New York City, which is unsurpassed on this continent, together with the industrial enterprise of the state, we have the secret of its commercial supremacy.

The most complete system of canals in the United States connects New York City and Buffalo. The same surface features that have made possible the great canal system have also favored the building of railroads, and the Hudson-Mohawk valley is one of the greatest railroad routes in the world. Four railroad trunk lines connect Buffalo and New York City, namely, New York Central; Erie; Lehigh Valley; and Delaware, Lackawanna and Western. There are several other important lines in the state, including the following: Pennsylvania; New York, New Haven and Hartford; Delaware and Hudson; New York, Ontario and Western; Buffalo, Rochester and Pittsburg; Central New England; Boston and Albany; Boston and Maine; and Ulster and Delaware. Numerous shorter roads and branch lines, also numerous electric roads, make excellent connections throughout the state and afford ready access to all parts of the country. From Buffalo, several railroads lead to points outside the state. These roads, with the facilities afforded by Lake Erie, make Buffalo one of the great shipping points of the country.

On December 31, 1917, there were in the state 8,351 miles of steam railroads; at the same time there were 2,020 miles of electric roads, both measured by single track.

The citizens of New York have a special advantage in its excellent system of improved state and county highways, including as it does a greater mileage and reaching more of the remote sections than does that of any other state. Already, there is hardly a township that is not accessible over one of the improved

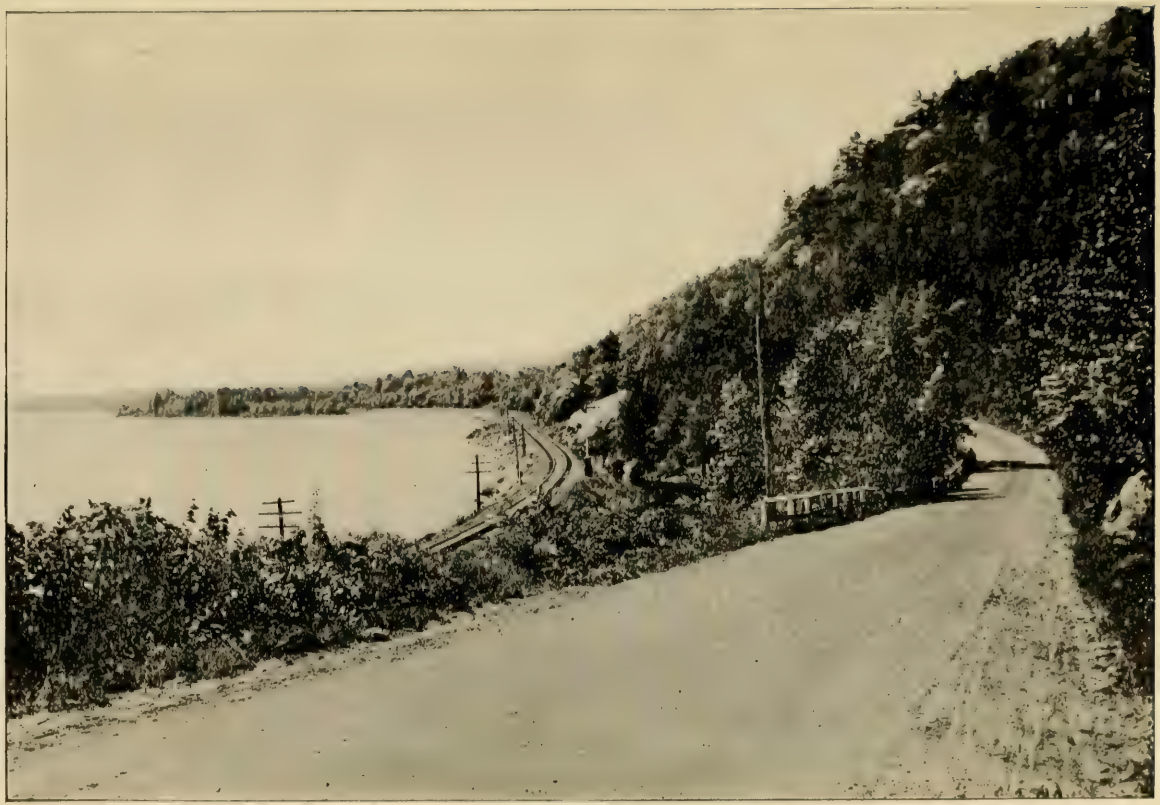


FIG. 23.—NEW YORK HAS EXCELLENT FACILITIES FOR COMMUNICATION AND TRANSPORTATION

roads, and plans are under way for a still greater extent of these privileges. The number of miles of completed improved highways in the state is approximately 7,300, with 300 miles additional under contract. Besides these, approximately 10,000 miles of roads are macadamized by local authorities and are practically as good as the macadam roads built by the state. It is estimated that 200,000 automobilists from other states take advantage of the improved roads of New York annually for the purpose of touring the state.

One of the notable changes that has been brought about by the construction of improved highways is in the distribution of milk. Large motor trucks may now travel long distances and carry large quantities of milk, thereby effecting a much more efficient distribution than was formerly possible.

FACTS CONCERNING NEW YORK STATE

Total population of New York State (1915)	9,687,744
Number of first-class cities (175,000 and over)	3
Number of second-class cities (50,000 to 175,000)	7
Number of third-class cities (less than 50,000)	46
Number of incorporated villages	473
Acres in farms (1910)	22,030,367
Number of farms (1910)	215,597
Average number of acres per farm	102
Miles of steam railroads	8,351
Miles of electric railways	2,020
Miles of improved state and county highways	7,300
Miles of additional macadam roads	10,000
Miles of gravel roads	20,000
Total number of miles of roads, including dirt roads in varying conditions of surface	80,000
Number of rural mail routes	1,791
Miles covered by these routes	45,629

MARKETS WITHIN THE STATE

With the excellent marketing facilities so readily available to all parts of the state, New York has in her 56 cities and 473 incorporated villages a complete system of markets, demanding, on all sides, farm produce of every description. These markets being established and their requirements being constant throughout the year, sales are practically assured. New York

City alone, comprising as it does more than half the population of the entire state and readily accessible from all sections of the state, has greater requirements for agricultural products than does any other point in America. Buffalo, at the opposite side of the state, also makes considerable demands on the agriculture of New York. Rochester, Syracuse, and Albany are active markets at intermediate points, all with a population of more than 100,000. A complete list of the cities of New York State with their population and the county in which each is located is given below:

Enumeration of Incorporated Cities, 1915

City	County	Inhabitants
Albany	Albany	107,979
Amsterdam	Montgomery	34,319
Auburn	Cayuga	32,468
Batavia	Genesee	13,278
Beacon	Dutchess	10,165
Binghamton	Broome	53,668
Buffalo	Erie	454,630
Canandaigua	Ontario	7,501
Cohoes	Albany	23,433
Corning	Steuben	13,459
Cortland	Cortland	12,367
Dunkirk	Chautauqua	17,870
Elmira	Chemung	40,093
Fulton	Oswego	11,138
Geneva	Ontario	13,232
Glens Falls	Warren	16,323
Gloversville	Fulton	21,178
Hornell	Steuben	14,352
Hudson	Columbia	11,544
Ithaca	Tompkins	16,750
Jamestown	Chautauqua	37,780
Johnstown	Fulton	10,687
Kingston	Ulster	26,354
Lackawanna	Erie	15,737
Little Falls	Herkimer	13,022
Lockport	Niagara	18,693
Middletown	Orange	16,381
Mount Vernon	Westchester	37,583
Newburgh	Orange	27,876
New Rochelle	Westchester	31,758
New York	Bronx, New York, Kings, Queens, Richmond	5,047,221
Niagara Falls	Niagara	42,257
North Tonawanda	Niagara	13,498
Norwich	Chenango	8,342
Ogdensburg	St. Lawrence	14,338
Olean	Cattaraugus	17,925
Oneida	Madison	9,461
Oneonta	Otsego	10,474
Oswego	Oswego	25,426
Plattsburg	Clinton	10,134
Port Jervis	Orange	9,413
Poughkeepsie	Dutchess	32,714
Rensselaer	Rensselaer	11,210
Rochester	Monroe	248,465

City	County	Inhabitants
Rome	Oneida	21,926
Saratoga Springs	Saratoga	13,792
Salamanca	Cattaraugus	8,370
Schenectady	Schenectady	80,381
Syracuse	Onondaga	145,293
Tonawanda	Erie	9,147
Troy	Rensselaer	75,488
Utica	Oneida	80,589
Watertown	Jefferson	26,895
Watervliet	Albany	14,990
White Plains	Westchester	19,287
Yonkers	Westchester	90,948

EDUCATIONAL FACILITIES

The fact that some of the best and oldest educational institutions in this country are located in New York State is an evidence of the high regard that New York constantly holds for education The colleges and universities, together with professional and technical schools, offer advantages for higher education along every line. So high an estimate is placed on the value of at least a common school education that it is made not only free, but compulsory, in the elementary schools of the state. These schools number more than 11,800. More than 700 schools, of which perhaps 100 are already included in the number just given, maintain an approved course of from one to four years of academic work. Vocational and industrial schools train pupils in various practical occupations.

ADVANTAGES FOR AGRICULTURAL INSTRUCTION

At the present time exceptional opportunities are offered for instruction in the vocation of farming. Besides the colleges of agriculture, six special schools of agriculture, located at Alfred, Canton, Cobleskill, Delhi, Farmingdale, and Morrisville, also seventy high school departments of vocational agriculture located in thirty-five counties of the state, have courses of instruction designed to fit boys and young men for this vocation. The following are some of the chief features of the high school departments:

1. The high school department is an integral part of the high school organization.

2. The work is given by one teacher, who is employed for twelve months in the year.

3. A four-year course is offered, leading to a vocational diploma issued by the Education Department, which is accepted by the colleges of agriculture at the universities of Cornell and Syracuse.

Any group of farmers or any small community maintaining a high school employing three teachers and enrolling as many as fifty pupils may establish a department. The department must be voted into the school by the taxpayers. In the establishment of the department two rooms are required, one for a shop and one for a laboratory. In regard to the salary paid the teacher, the following schedule is pursued:

If a minimum salary of $1,400 is paid, the board of education will be reimbursed from state and federal funds equal to $1,000 from state funds and $200 from federal funds. Each additional increase of $100 in salary up to a maximum of $2,400 is met by a one-third apportionment from the community and two-thirds from federal funds. A salary of $2,400 would thus be distributed as follows: Community, $533; state, $1,000; federal funds through the State Education Department, $866. Courses in homemaking may be introduced in the same manner as courses in agriculture, half of the salary of the teacher being paid from state funds.

The state and federal aid given these high school departments is an expression on the part of the state and federal governments of the right to purchase a kind of education of a given standard. A community may receive the reimbursement provided compliance is made with the requirements set up by the Board of Regents of the State of New York.

General Methods

The work is so organized that ample consideration is given to a study of the principles and the application of the principles through practice. Each pupil studying agriculture must pursue a farm enterprise over a period of at least six months of the year. The enterprise is usually carried on at the home of the pupil and under the immediate supervision of the teacher of agriculture. Those enterprises are designated as "home projects."

The courses are so arranged as to give the pupils a breadth of knowledge that will enable them to enter on their life work with a broad outlook. There are included four years of English; two years of mathematics; two years of science; one year of civics; one year of history; and four years of agriculture. The agricultural course of study is as follows:

First year: farm shop work; poultry husbandry; home gardening.

Second year: farm crops; soils and fertilizers.

Third year: animal husbandry and dairying; fruit growing or truck gardening.

Fourth year: farm management; rural engineering; rural economics; farm mechanics.

SOURCES FROM WHICH AGRICULTURAL INFORMATION MAY BE OBTAINED

General information along agricultural lines is freely given, not only by the Division of Agriculture at Albany, the College of Agriculture at Ithaca, and the State Experiment Station at Geneva, but also by the various farm bureaus located in all the agricultural counties of the state.

Bulletins covering in a comprehensive manner the principal agricultural interests, including horses, dairying, sheep, swine, and poultry, as well as fruit, vegetables, potatoes, and grasses and leguminous crops, may be obtained by addressing Department of Farms and Markets, Division of Agriculture, Albany, N. Y.

A list of the farm bureau managers in the various counties of the state is given below:

COUNTY FARM BUREAU MANAGERS

County	Name	Address
Albany	L. W. Crittenden	93 Court House, Albany
Allegany	C. B. Raymond	Belmont
Broome	J. F. Eastman	Court House, Binghamton
Cattaraugus	O. H. Chapin	Federal Bldg., Olean
Cayuga	E. C. Weatherby	Auburn
Chautauqua	H. B. Rogers	Jamestown
Chemung	R. W. Holman	Chamber of Commerce, Elmira
Chenango	C. E. Smith	Norwich
Clinton	R. F. Fricke	Plattsburg
Columbia	A. B. Buchholz	Court House, Hudson
Cortland	A. S. Merchant	Cortland
Delaware	E. G. Brougham	Walton
Dutchess	F. H. Lacy	Poughkeepsie
Erie	E. V. Underwood	Root Bldg., Buffalo
Essex	Jay Gelder	Westport
Franklin	C. M. Austin	Court House, Malone
Fulton	H. C. Morse	Gloversville
Genesee	E. L. Baker	Batavia
Greene	Loren S. Kibby	Catskill
Herkimer	C. A. Taylor	Herkimer
Jefferson	W. I. Roe	Watertown
Lewis	A. D. Davies	Lowville
Livingston	E. A. Flansburg	Mt. Morris
Madison	F. R. Walkley	Cazenovia
Monroe	D. C. Vann	127 East Ave., Rochester
Montgomery	W. J. Hagar	Canajoharie
Nassau	H. J. Evans	Mineola

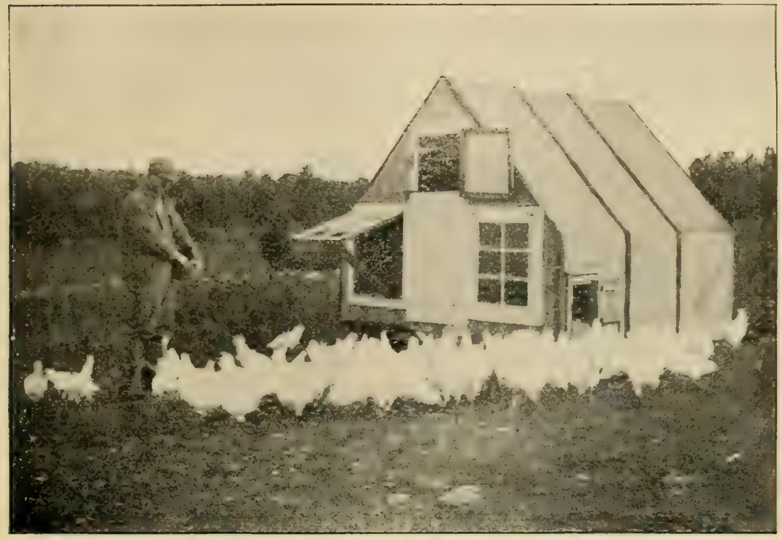


FIG. 24.—A POULTRY PROJECT
Vocational Instruction Includes at Least Six Months of Supervised Practical Work

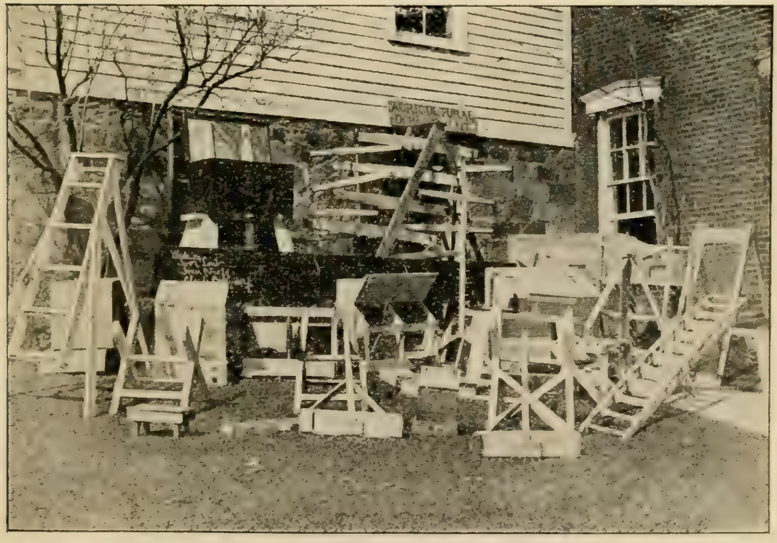


FIG. 25.—ARTICLES CONSTRUCTED IN FARM SHOP OF HIGH SCHOOL
Department of Vocational Agriculture in New York State

County	Name	Address
Niagara	N. R. Peet	Lockport
Oneida	G. W. Bush	Court House, Utica
Onondaga	R. E. Deuel	112 Court House, Syracuse
Ontario	G. W. Peck	Canadaigua
Orange	L. D. Greene	Middletown
Orleans	L. J. Steele	Albion
Oswego	A. L. Shepherd	Oswego
Otsego	R. Van Scoik	Cooperstown
Rensselaer	N. G. Farber	Court House, Troy
Rockland	T. C. Murray	Spring Valley
St. Lawrence	E. S. Bird	Canton
Saratoga	L. M. Allen	Saratoga Springs
Schenectady	T. B. Clausen	Court House, Schenectady
Schoharie	R. F. Pollard	Cobleskill
Schuyler	H. G. Chapin	Watkins
Seneca	W. D. Chase	Romulus
Steuben	E. W. Cleeves	Bath
Suffolk	C. R. Inglee	Riverhead
Sullivan	Charles Wille	Liberty
Tioga	E. R. Zimmer	Owego
Tompkins	V. B. Blatchley	Ithaca
Ulster	E. L. Chase	Kingston
Warren	K. D. Scott	Warrensburg
Washington	J. M. Hurley	Hudson Falls
Wayne	F. E. Rogers	Sodus
Westchester	J. G. Curtis	Court House, White Plains
Wyoming	T. W. Vann	Warsaw
Yates	A. L. Hollingworth	Penn Yan

ALBANY COUNTY

Albany County is situated at the junction of the Hudson and Mohawk rivers, the eastern boundary being formed by the Hudson and the northeastern by the Mohawk. It lies at the head of tidewater, about 150 miles from the mouth of the Hudson.

The total area is 337,280 acres. From east to west the county measures about 25 miles; from north to south about 22 miles.

The population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

*Albany (city)	107,979	Guilderland	3,690
Cohoes (city)	23,433	Knox	1,101
Watervliet (city)	14,990	New Scotland	2,924
Berne	1,638	Rensselaerville	1,619
Bethlehem	5,590	Westerlo	1,263
Coeymans	4,581		
Colonie	9,989	Total	183,330
Green Island	4,533		

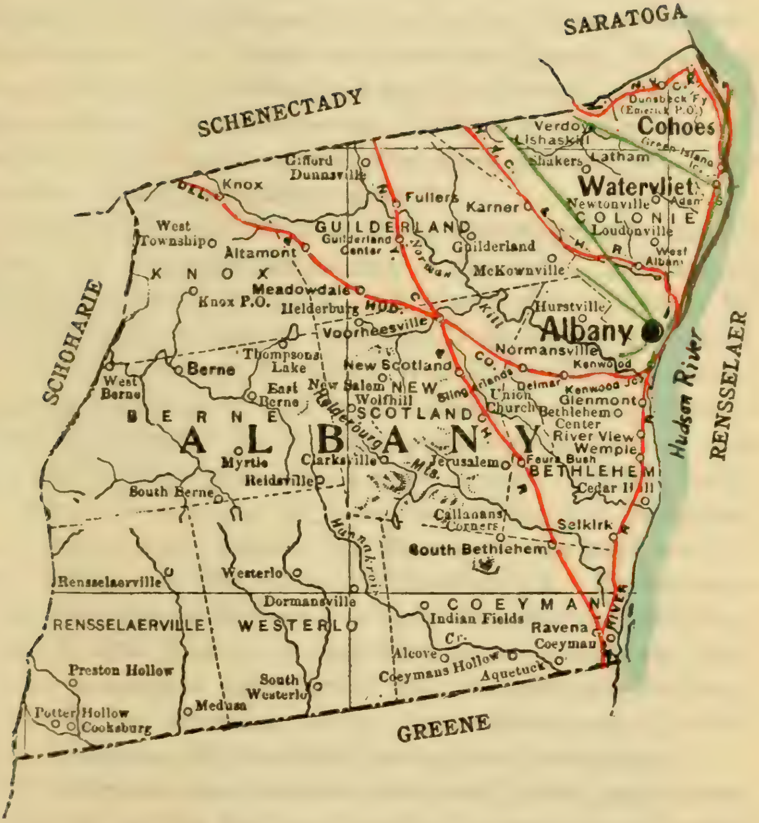
*Albany is the county seat.

HISTORICAL ASSOCIATIONS

This was one of the ten original counties formed in 1683, the other nine being New York, Westchester, Ulster, Dutchess, Orange, Richmond, Kings, Queens, and Suffolk. The boundaries were changed during subsequent periods; in 1768 Albany County included all that part of New York lying north of Ulster and Dutchess counties on both sides of the Hudson, and at one time the whole of Vermont. The present limits were adopted shortly after the Revolution. Its name arises from the Scotch title of the Duke of York, and was first used after the surrender of the colony to the English in 1664.

Hendrick Hudson is supposed to have made his famous trip up the Hudson in the "Half Moon" in 1609, as far as the present location of Albany. Within the next three or four years several Dutch traders commenced the beaver trade with the Indians.

Note: Albany has at present a population of about 113,000.


SARATOGA
SCHENECTADY
SCHOHARIE
RENSSELAER
GREENE
Hudson River
N. Y. C. R. R.
Dunsbeck Fy (Emerick P.O.)
Cohoes
Green Island
Verdoy
Lishaskill
Shakers
Latham
Watervliet
Adams
Newtonville
COLONIE
Loudonville
West Albany
Karner
Guilderland
McKownville
Fullers
GUILDERLAND
Guilderland Center
Normans Kill
Gifford
Dunnsville
Knox
West Township
Altamont
KNOX
Knox P.O.
Meadowdale
Helderburg
Voorheesville
Hurstville
Albany
Normansville
Kenwood
Kenwood Jc.
Delmar
Slingerlands
Glenmont
Union Church
Bethlehem Center
River View
Wemple
Feura Bush
BETHLEHEM
Cedar Hill
Selkirk
South Bethlehem
Callanans Corners
Thompsons Lake
Berne
West Berne
East Berne
New Scotland
New Salem
Wolfhill
NEW SCOTLAND
Helderburg Mts.
BERNE
ALBANY
Myrtle
Clarksville
Reidsville
Jerusalem
South Berne
Hannakrois
Rensselaerville
Westerlo
Dormansville
COEYMANS
Indian Fields
Ravena
Coeymans
Coeymans Hollow
Alcove
Aquetuck
RENSSELAERVILLE
WESTERLO
Preston Hollow
South Westerlo
Medusa
Potter Hollow
Cooksburg
Hud. R.
D. & H. C. Co.

MAP OF ALBANY COUNTY, SHOWING TOWNSHIPS
Red, railroads; green, electric roads; brown, canals

Learning that furs were largely obtained from the Iroquois, Hendrick Christiansen resolved to form a permanent trading post at the entrance of their country. Accordingly he built, in 1614, a solid log house nearly forty feet long surrounded by a stockade. It was located on Castle Island below Albany, and was know as Fort Nassau; there he left a permanent garrison of ten men. In 1623 Fort Orange was built near the present steamboat landing in the southern part of the city, and Albany was thereafter known as Fort Orange for a number of years. From Fort Orange the ship Nieu Nederlandt took 1,500 beaver and 500 otter skins at the close of the first season. In 1658 the number exported reached 57,640 beaver and 300 otter skins, a beaver skin being valued at about eight guilders, or $3.20.

Until after the year 1625, the Dutch did not seriously consider making any permanent settlements in this state. They merely visited the country in autumn and winter, with a view to the fur trade with the Indians, returning in the spring to Holland. In that year, however, the Dutch West India Company offered large appropriations of land to such families as should settle in "New Netherlands," as the Dutch possessions in America were then called. Four years later a grant of land, including nearly all of that now forming the counties of Albany and Rensselaer, was conferred upon Killian Van Rensselaer, who was known as the "Patroon" of the manor of Rensselaerwyck. By the terms of the grant the charter would be forfeited unless the lands were settled in seven years by at least fifty persons over fifteen years of age. A shipload of emigrants was forwarded the next year, and during the succeeding decade there followed many families whose names are still prominent among their descendants.

The emigrants were furnished with stock, seeds, and farming implements, and the land was leased at an annual rent, payable in grain, beeves, and wampum, or a share of the products. This period marks the beginning of agricultural improvements.

From earliest times the leasehold tenures excited discontent among the tenants. As succeeding patroons treated the appeals of the tenants with very little regard, the intense feeling led to armed resistance to the collection of rents. The excitement resulted in calling out the militia to enforce the laws. In 1846 a clause was inserted in the state constitution forbidding leases of farm lands longer than twelve years.

Besides its ancient importance as a principal center of the Indian trade, Albany afterward became a place where the great military expeditions against Canada were fitted out. It became the permanent seat of the state government in 1797. For thirty years after the Revolution, Albany received the entire trade of the western part of the state, the produce being brought in by sleighs during the winter.

The first great impulse to its commercial prosperity was given by the successful trip of Fulton's "Clermont" in 1807, and the improvements in steam navigation that immediately followed. Albany being the eastern terminus of the Erie Canal, the completion of the latter in 1825 added essentially to the growth and prosperity of the city. Six years later, in 1831, the city was further aided by the opening of the Albany and Schenectady Railroad, which was the first in the state, as well as the second in the United States.

Albany was the home of Philip Schuyler, the Revolutionary leader and patriot. The mansion in which he lived has been purchased by the state and an effort is being made to preserve its original appearance.

DEVELOPMENT OF INDUSTRY

When the English took control of the colony in 1664 the products of Albany County included corn, wheat, flax, hemp, and tobacco. Sugar made from the maple was a substitute for cane sugar. The products that could be exchanged were taken by the English agent and in 1665 no grain was allowed to be shipped down the Hudson. In 1692 wheat was sold at four shillings per bushel.

In 1860 Albany was the largest barley market in the United States and was one of the three largest lumber markets in the state, Troy and West Troy also standing among the foremost. By 1880 hemp and flax had generally disappeared from Albany County farms, the cultivation of hops being largely substituted.

At the present time the agriculture of Albany County is of a very general nature. Rye is the leading grain crop, Albany County ranking third in the state in its production. This county also stands among the foremost in garden crops, large quantities being raised near the city of Albany, particularly in the towns of Bethlehem, Colonie, and Guilderland. One of the crops for which this county is especially noted is muskmelons, large acreages in Bethlehem and Colonie being devoted to their production. Fruit, which is raised throughout the county, is produced to a considerable extent in the Helderberg section and between the Helderbergs and the river, as well as in the southern end of the county. The importance of this production is reflected in the fact that Albany County ranks well among the fruit-producing counties of the state, particularly in apples, pears, plums, and small fruits.

CLIMATE AND RAINFALL

Meteorological records for Albany County are made at Albany, where observations of the United States Weather Bureau are conducted by G. T. Todd, meteorologist.

The average dates for the last killing frost in spring and the first in fall are April 23 and October 14, respectively, giving a growing season of 173 days.

The following table with the exception of snowfall, covers a period of forty-six years, the snowfall record being for thirty-four years:

RECORDS OF TEMPERATURE AND PRECIPITATION AT ALBANY

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	23.7	64	1906	—24	1904	2.42	1.62	1891	10.7
February.....	23.3	63	1903	—18	1875	2.45	1.89	1896	12.7
March........	32.9	79	1905	—8	1900	2.73	2.29	1888	10.5
April........	46.5	91	1915	13	1874	2.46	2.02	1886	2.1
May..........	59.0	97	1911	29	1876*	3.03	2.19	1906	T
June.........	67.9	99	1901	40	1878*	3.42	2.95	1883	......
July.........	72.8	104	1911	48	1918*	3.59	3.12	1897	......
August.......	70.5	102	1918	43	1912*	3.72	2.90	1901	......
September....	63.3	97	1895	32	1914*	3.11	3.27	1890	......
October......	51.6	90	1900	23	1876	2.91	4.75	1903	T
November....	39.4	71	1914	—10	1875	2.56	2.46	1907	3.7
December.....	28.1	66	1889	—19	1917	2.57	2.39	1878	9.3
Year.........	48.2	104	1911	—24	1904	34.94	4.75	1903	50.7

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

Along the Hudson are narrow alluvial flats bordered by a series of bluffs from 100 to 200 feet high. From these bluffs a plateau extends westward to the Helderbergs. Beyond, sloping gradually toward the west and south, are irregular plateaus. The alluvial lands along the Mohawk are bordered by bluffs from which a rolling plateau extends back to the center. Nearly all of the streams that flow into the Hudson have worn deep gorges, many of which are 100 feet deep and extend from a quarter of a mile to several miles back from the river.

Topographically the county may be divided into two general divisions, a more or less level tableland occupying the northern third of the county and a rough, hilly, or mountainous section occupying the western and southwestern portions. A well-defined line separating these two areas is formed by the Helderberg Mountains, which begin in the northwest corner of the county and extend southeast almost to the river at the southern boundary.

The Helderberg Mountains are generally low and are principally of limestone formation. In the vicinity of these mountains, and in some cases on top of them, there is considerable limestone soil. This is the best soil in the county, and is particularly adapted to the growing of alfalfa, legumes, and fruit. The soil lying on the top and back of the Helderbergs varies greatly in character. In some places the limestone soil prevails, while in others there is a stony loam lying on the top of a tight clay. In still other sections the soil is a loose stony or gravelly loam. There is also a very small amount of Volusia silt loam in this hilly section.

The section below the Helderbergs was formerly a lake bottom, and consequently is much varied in character. Fully one-third of the area is made up of a light sand, which in some places is so light that it blows about and is practically worthless from an agricultural standpoint. The balance of the soil varies from a sand to a heavy clay, the clay being found along the banks of the Hudson River, the Normans Kill, and other streams. This clay is heavily impregnated with lime, which renders it a very desirable soil for the growth of legumes, particularly where the contour is such as to admit of good drainage.

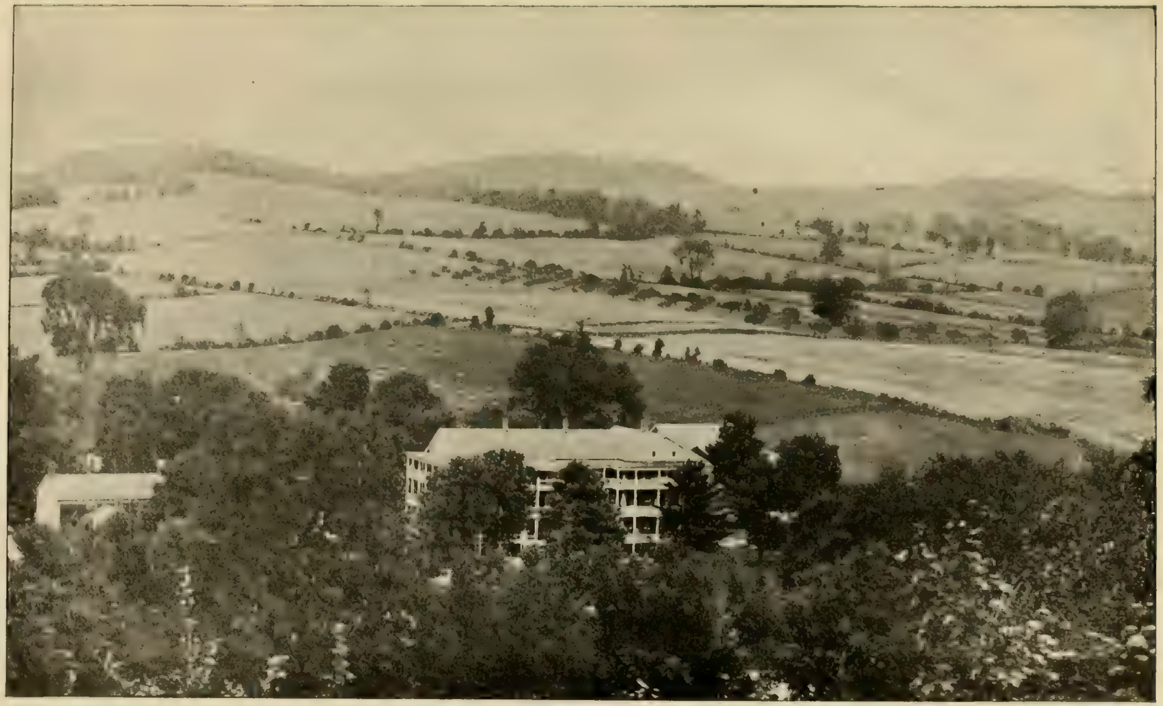


FIG. 26.— FARM LAND NEAR BERNE

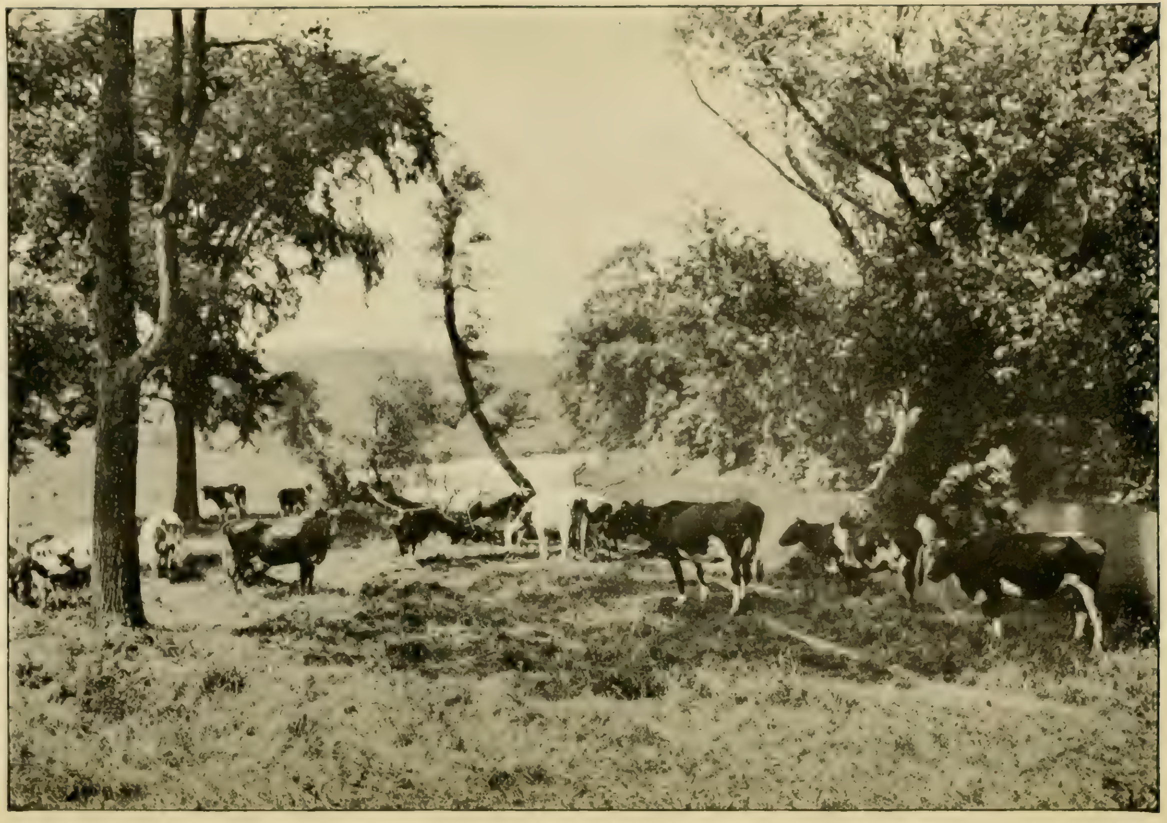


Fig. 27.— Cattle on Bank of Normans Kill, near Albany

DESCRIPTION BY TOWNSHIPS

BERNE: The surface is broken, the Helderberg Mountains lying on the eastern border. The lofty ledges of these hills are interesting natural features. In the southwest is elevated land, the highest elevations lying 2,000 feet above tide. The principal stream is the Switzkill. Warner Lake and a portion of Thompson's Lake are located in the northeastern part of the town. This town contains some of the best land in the county. There is considerable limestone soil, also a sandy, gravelly loam interspersed with clay.

Many of the best farms of the county lie within this township. Owing to its distance from the railroad these farms can now be purchased for less than the value of the buildings. More alfalfa is grown in the township than in any other portion of the county. Because of this fact and the large amount of cheap land available for pasturage, Berne is particularly suited to the live stock industry.

Products: General farm crops.

Average values of farm land range from $5 to $50 an acre.

BETHLEHEM: The surface is a rolling upland with bluffs 100 feet to 150 feet in height rising above the fertile alluvial flats on the river. Near the center are a few sandy ridges and rocky knolls. The principal streams are Normans Kill and Coeymans Creek. The soil varies from a light blow sand to the stiff Vergennes clay, most of the soil types being represented. The most valuable and productive types are the silt and clay loams in the immediate vicinity of Albany. Sandy loam is the most extensive soil type and on this the garden crops are most largely grown. The heavy clay bordering the banks of the streams is well adapted to the growth of alfalfa and blue grass. Sandy clay loam is another extensive soil type in the southern part of the town and forms the best general farming land in the township.

Products: Vegetables, fruit, melons, and general farm products.

Average values of farm land range from $50 to $500 an acre.

COEYMANS: The surface rises from the river to an upland 200 to 400 feet high, broken by ridges 600 to 800 feet in height. The principal streams are Coeymans and Hannacroix creeks. The section of the township lying east of the Helderbergs is made up largely of clay loam soil, while in other parts of the township there is a great variety of soil types. In the immediate vicinity of the Helderbergs there is some limestone and back of the mountains the soil varies from clay loam to sandy or stony loam and alluvial soils. In some portions of Coeymans Hollow there are quite extensive areas of alluvial soil. This section contains some of the best orchards in the Hudson valley.

Products: Fruit and general farm crops and live stock.

Average values of farm land range from $10 to $100 an acre.

COLONIE: The surface is principally an upland 300 to 400 feet above the river, intersected by shallow ravines formed by several small streams. A fine intervale extends along the Hudson. The soil varies from a light, sandy loam to heavy clay. This township is almost entirely surrounded by cities, Schenectady lying on the north, Waterford, Cohoes, Troy, and Watervliet on the east, and Albany on the south and southwest. The effect of this situation on the township is very apparent. It has resulted in making a garden section out of the light clay and sandy loam soils, while the heavy loams and the parts of the township devoted to general farming have been neglected, due partly to the difficulty in keeping labor on the farms that lie so close to the city.

The east side of the township has bright prospects for the future, due not only to its location with respect to the cities, but to the fact that the Hudson River and the Barge and Champlain canals are on its border. The government arsenal at Watervliet is one of the largest in the country. The power from the government dam at Troy has by recent act of Congress been made available for manufacturing purposes. The northern half of Green Island has been purchased by Henry Ford, who proposes to erect a ten-million-dollar tractor plant. Aside from these two manufacturing establishments there are many others of importance either in operation or under contemplation. Among those in operation are the Ludlum Steel Company, The American Car Wheel Works, and the A. P. W. Paper Company.

Products: Vegetables, fruit, melons, and general farm products.

Average values of farm land range from $50 to $500 an acre.

GUILDERLAND: The surface varies from the sandy ridges and marshes of the eastern part of the town to the higher hills of the Helderbergs on the west. In the latter section lies the John Boyd Thacher Park, a gift from Mrs. Thacher to the state. The soil varies from a light blow sand in the east to a clay loam on hardpan in the northwest. The dominant soil type is a dark, stony clay loam on a more or less impervious subsoil. There is considerable loose, gravelly soil in the town, which is principally utilized for the growing of fruit, a crop to which it is well adapted. General farming is the principal type of agriculture.

Products: General farm crops.

Average values of farm land range from $5 to $100 an acre.

KNOX: The surface is a lofty plateau inclined slightly toward the northwest from the Helderbergs, which lie on the eastern border. The surface is diversified by small hills. The principal streams are the Bozen Kill on the east and the Beaverdam Creek in the south. The soil is generally of good quality, gravelly loam mixed with clay. There is also considerable limestone soil.

Products: General farm crops.

Average values of farm land range from $5 to $50 an acre.

NEW SCOTLAND: With the exception of the northeast quarter of the township, which is made up principally of the plain extending over the eastern portion of the county, the town is generally occupied by the Helderbergs, the highest ridge rising along the western border. The highest points are from 1,600 to 1,800 feet in height. In this section lies the John Boyd Thacher Park, which includes the Indian Ladder gap, noted for its scenery, and supposed to mark a former Indian trail. The principal streams are the Black and Coeymans creeks and their tributaries. The soil is a gravelly loam mixed with clay. Limestone caves, sinkholes, and subterranean streams are among the natural curiosities.

Fruit is an important product of the township, although general agriculture is the main industry. Dairying is becoming a prominent feature in the vicinity of Feura Bush.

Products: Fruit and general farm crops.

The average values of farm land range from $5 to $200 an acre.

RENSSELAERVILLE: The surface is mostly uplands broken by ridges from the Helderberg Mountains, which extend north and south and rise from 1,800 to 2,000 feet above sea level. The narrow, fertile valleys are watered by the rapid streams, including Catskill and Tenmile creeks. The greater part of the soil is clay and gravel lying on hardpan, that in the valleys, as well as in some of the highlands, being made up of gravelly and alluvial soils. General farming is the dominant type of agriculture, sheep raising being followed quite extensively. Fruit raising and dairying are extensively carried on in the southern part of the town, which is well adapted to this type of agriculture.

Products: Fruit and general crops.

Average values of farm land range from $5 to $50 an acre.

WESTERLO: The surface is broken and hilly, with a southerly inclination. The highest points on the northwest are 1,600 feet above sea level. The valleys are narrow ravines. The soil of this township is similar to the other townships lying in the Helderberg Mountains, varying from a stony clay loam to gravelly loam. This is a good agricultural township, but the location is so far distant from markets as to render the land less desirable than in some other sections. General agriculture predominates. Although the township is well adapted to dairying, this industry is not extensively followed. With the improvement of facilities for carrying produce to the cities this line of agriculture will increase greatly in its extent.

Products: General farm crops.

The average values of farm land range from $5 to $75 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The New York Central Railroad crosses the Hudson from Rensselaer to Albany, and from Troy to Green Island junction and Cohoes. From the latter place and from Albany, lines extend to the northeast part of the county and to Schenectady.

The West Shore division extends from Albany down the west side of the river to Jersey City, branching at Ravena and running a line northwest across Albany County to Schenectady.

The Boston and Albany crosses the river from Rensselaer and terminates at Albany.

The Delaware and Hudson follows the west bank of the Hudson River from the north, passing through Albany, then turning northwest and connecting with the West Shore at Voorheesville and with the main line of the Delaware and Hudson at Duane in Schenectady County.

Connections are made at Albany with the Boston and Maine and Rutland railroads.

Electric Roads

The Schenectady Railway has two lines in the county, one leading from Albany and the other from Troy, Rensselaer County, northwest to Schenectady.

The United Traction Company serves the cities of Albany, Watervliet and Cohoes; also crossing the river to Troy.

The Albany Southern Railway terminates at Albany, crossing the river and running through Rensselaer and Columbia counties to Hudson.

Waterways

Albany is favored with excellent water transportation, since it is located at the head of navigation on the Hudson River and is also the terminus of the Barge Canal.

Improved Highways

A state road between New York and Buffalo passes through Albany. Other improved highways lead from Albany in various directions, as shown on the accompanying map. There are in the county 195 miles of improved highway with four miles additional under construction.

AVAILABLE MARKETS

The three cities in the county, Albany, Cohoes, and Watervliet, which have a combined population of 146,400, form excellent local markets. The neighboring cities of Troy and Schenectady are also favorable markets within easy reach.

Albany is the seat of the state government and one of the oldest of American cities. Lying at the point where great natural trade routes meet, it has an unusually favorable location as a trading center, not only by means of the Hudson River and the Barge and Champlain canals, but also by means of the various railroads that center here, as well as by the three electric roads. The Albany market is one of the best to be found in the eastern part of this country.

Albany is the headquarters of the University of the State of New York and of the State College for Teachers and the State Library School, as well as several other excellent schools. Dudley Observatory is located here. The city is also the location for extensive repair shops of the New York Central Railroad.

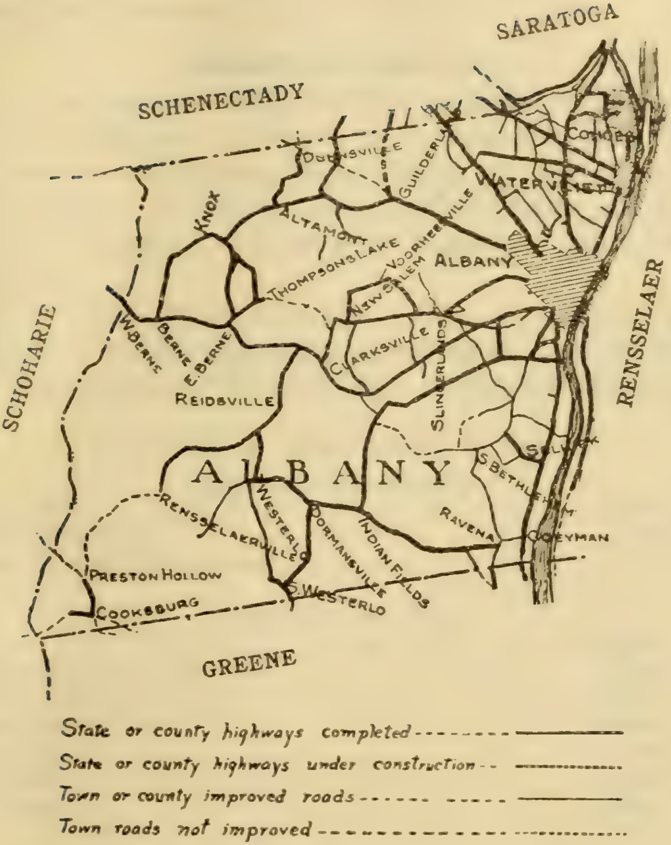
Cohoes has an immense water power and is extensively engaged in the manufacture of hosiery and knit goods. The city also contains many other factories, including foundries and machine shops.

Watervliet has a large lumber trade and numerous manufactories. It is said that the Watervliet arsenal manufactured the largest gun used in the recent World War.

The cities of the capital district absorb most of the milk production of the county in the form of market milk or cream. About one-fourth of that collected at the milk establishments is made into creamery butter, and a considerable amount of Italian and Greek types of cheese is manufactured.

The agricultural organizations of the county are as follows:

Albany County Agricultural Society and Exposition.
Albany County Dairymen's League.
Albany County Farm Bureau Association.
Albany County Sheep Breeders' Cooperative Association, inc.
Albany Market Growers' Cooperative Association, inc.
Bethlehem Mutual Protective Association.
Capital District National Farm Loan Association.
Collar City National Farm Loan Association.


SARATOGA
SCHENECTADY
SCHOHARIE
RENSSELAER
GREENE
ALBANY
COHOES
WATERVLIET
ALBANY
DUNNSVILLE
GUILDERLAND
KNOX
ALTAMONT
THOMPSONS LAKE
VOORHEESVILLE
NEW SALEM
W. BERNE
BERNE
E. BERNE
REIDSVILLE
CLARKSVILLE
SLINGERLANDS
SELKIRK
S. BETHLEHEM
RAVENA
COEYMAN
RENSSELAERVILLE
WESTERLO
DORMANSVILLE
INDIAN FIELDS
PRESTON HOLLOW
COOKSBURG
S. WESTERLO
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Granges: Pomona and five subordinate granges.
Guilderland Mutual Protective Association.
Medusa Dairy Improvement Association.
Mohawk Valley National Farm Loan Association.
Patrons of Industry: five associations.
Troy Market Gardeners' Cooperative Association, inc.
Westerlo Dairymen's Association.
Young Men's Agricultural Club of Newtonville.

EDUCATIONAL FACILITIES

The University of the State of New York has its headquarters in the city of Albany. In this city is also located the State College for Teachers and the State Library School. In addition to these are the Albany Law School, Albany Medical College, and Albany College of Pharmacy, all of which are branches of Union College, Schenectady.

Other schools affording suitable facilities for maintaining an approved course for high school and academic work are located at Albany, Altamont, Coeymans, Elba, Ravena, and Watervliet.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	289,829 acres
Number of farms	3,146
Per cent of farm land improved	78.3

LIVE STOCK PRODUCTS

Milk sold	1,971,395 gals.
Cream sold	6,825 gals.
Butter fat sold	1,195,016 lbs.
Butter produced	355,129 lbs.
Cheese produced	5,856 lbs.
Eggs produced	1,120,282 doz.
Wool produced	9,397 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8,780
Cattle	21,561
Sheep	17,070
Swine	13,607
Poultry	171,339

BEES

Number of colonies	3,035

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	9,419	264,047
Oats	21,454	502,177
Wheat	495	10,916
Barley	525	9,071
Buckwheat	10,638	197,474
Rye	10,441	164,359

	Acres	Tons
Hay and Forage	77,459	80,277

Special Crops:	Acres	Quantity
Potatoes	3,708	283,564 bu.
Vegetables, other than potatoes	4,614	....
Dry edible beans	34	548 bu.
Dry peas	12	169 bu.

Fruits:		
Apples	231,398 trees	527,829 bu.
Peaches and nectarines	8,737 trees	933 bu.
Pears	43,404 trees	30,275 bu.
Plums and prunes	42,230 trees	13,842 bu.
Cherries	12.355 trees	4,378 bu.
Quinces	510 trees	603 bu.
Grapes	8,782 vines	85,381 lbs.
Small fruits	588 acres	821,241 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,048	2,792

LIVE STOCK AND POULTRY

Horses and mules	7,482	6,691
Cattle	18,255	16,446
Sheep	11,794	8,789
Swine	8.648	8,188
Poultry	188,301	158,881

BEES

Number of colonies	2,771	3,313

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	8,284	8,181	108,602
Oats	22,182	19,140	500,741
Barley	699	508	8,494
Buckwheat	9,493	13,602	100,314
Wheat (winter)	2,080	1,223	27,640
Wheat (spring)	239	261	2,066
Rye	10,833	8,008	124,512

	1917	1918	
Hay and Forage:	Acres	Acres	Yield
Alfalfa	1,297	1,288	2,537 tons
Other hay	72,916	70,124	75,906 tons
Corn (ensilage)	2,687	1,788	13,096 tons
Corn (fodder)	....	1,742	....
Special Crops:			
Field beans	635	1,884	6,977 bu.
Cabbage	1,409	826	4,531 tons
Potatoes	2,557	2,967	135,630 bu.
Roots raised for stock food	....	227	....
Canning factory crops	247	318	....
Other vegetables and garden crops	2,815	3,696	....
Fruits:			
Apples	8,324	9,773	233,893 bu.
Peaches	217	275	8,447 bu.
Pears	868	1,190	72,467 bu.
Plums	302	284	132,091 lbs.
Cherries	163	269	18,423 lbs.
Quinces	....	15	60 bu.
Vineyard	49	133	12,814 lbs.
Small fruits	904	1,136	....

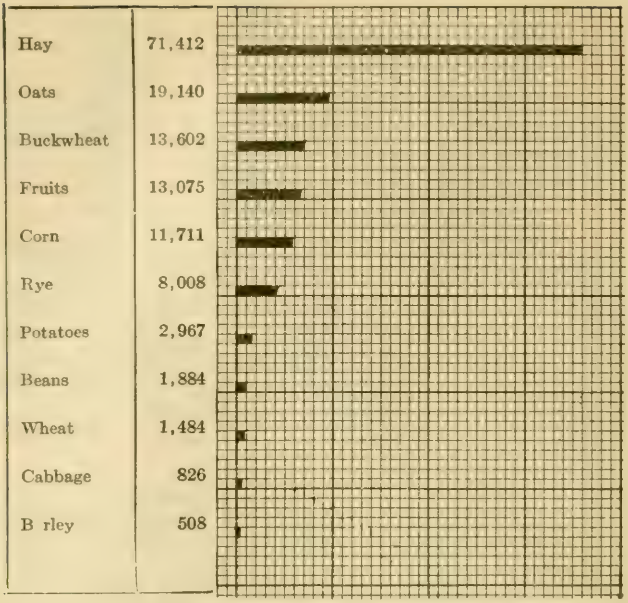
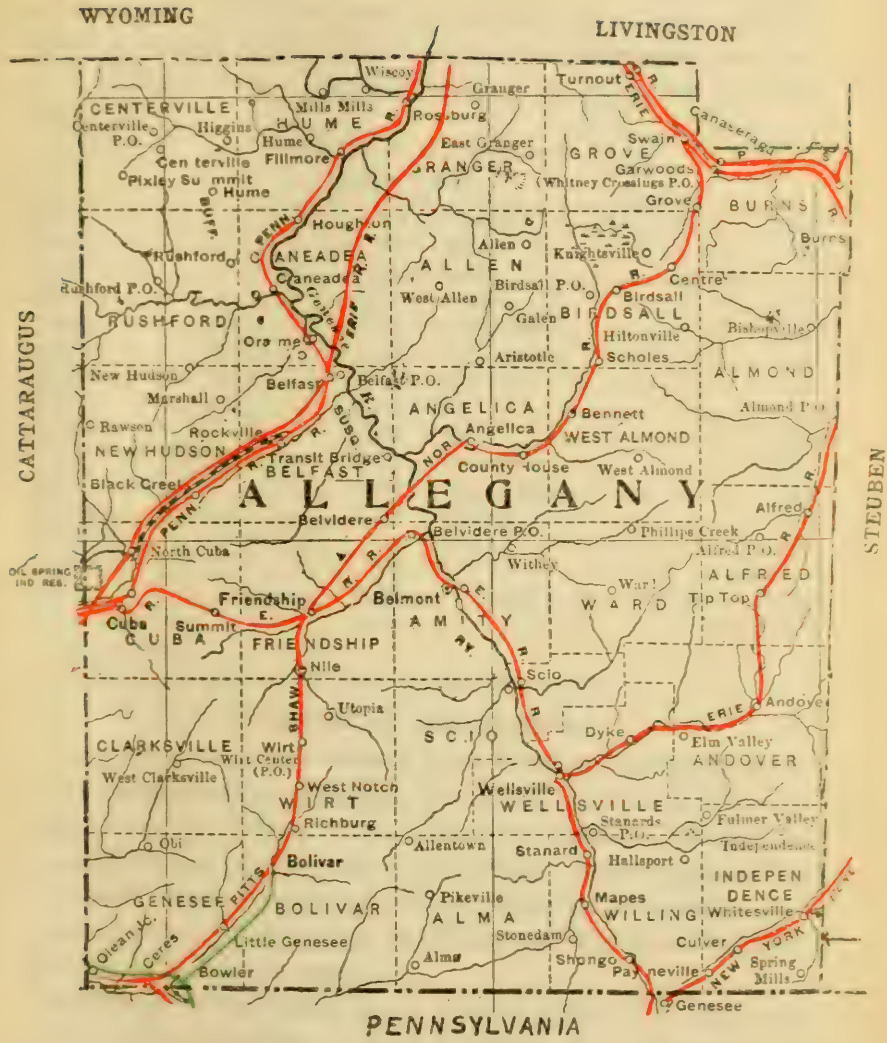


FIG. 28.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN ALBANY COUNTY.


WYOMING
LIVINGSTON
CATTARAUGUS
STEUBEN
PENNSYLVANIA
ALLEGANY
Wiscoy
Granger
Turnout
ERIE R.
CENTERVILLE
Mills Mills
HUME
Rossburg
Centerville P.O.
Higgins
Hume
Fillmore
East Granger
GRANGER
GROVE
Swain
Canaseraga
Garwoods
Centerville
Pixley Summit
Hume
Whitney Crossings P.O.
Grove
BURNS
Houghton
Allen
Knightsville
Burns
Rushford
CANEADEA
Caneadea
ALLEN
West Allen
Birdsall P.O.
Centre
Rushford P.O.
RUSHFORD
Birdsall
Galen
BIRDSALL
Bishopville
Hiltonville
Oramel
Aristotle
Scholes
New Hudson
Belfast
Belfast P.O.
ALMOND
Marshall
ANGELICA
Bennett
Almond P.O.
Rawson
Rockville
Angelica
WEST ALMOND
NEW HUDSON
Transit Bridge
BELFAST
County House
West Almond
Black Creek
PENN.
BUFF.
Alfred
Belvidere
Belvidere P.O.
Phillips Creek
North Cuba
Withey
Alfred P.O.
OIL SPRING IND. RES.
Ward
ALFRED
Friendship
Belmont
Tip Top
WARD
Cuba
Summit
AMITY
CUBA
FRIENDSHIP
Nile
Scio
Andover
Utopia
ERIE
SHAW
SCIO
Dyke
Elm Valley
CLARKSVILLE
Wirt
Wirt Center (P.O.)
ANDOVER
West Clarksville
Wellsville
West Notch
WELLSVILLE
WIRT
Stanards P.O.
Fulmer Valley
Richburg
Allentown
Stanard
Independence
Obi
Bolivar
Hallsport
INDEPENDENCE
GENESEE
PITTS.
Mapes
BOLIVAR
Pikeville
ALMA
WILLING
Whitesville
Olean
Ceres
Little Genesee
Stonedam
Culver
Alma
Shongo
Bowler
Paynesville
NEW YORK
Spring Mills
Genesee

MAP OF ALLEGANY COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads

ALLEGANY COUNTY

This is one of the southern tier of counties west of the center of the state. It has an area of 670,080 acres; from north to south it extends approximately thirty-seven miles, and from east to west thirty miles. The population is shown in the following table:

Population by Townships

(Census of 1915)

Alfred	1,495	Genesee	1,061
Allen	627	Granger	709
Alma	752	Grove	752
Almond	1,279	Hume	1,915
*Amity	2,015	Independence	1,177
Andover	2,013	New Hudson	762
Angelica	1,718	Rushford	1,326
Belfast	1,477	Scio	1,064
Birdsall	564	Ward	506
Bolivar	2,180	Wellsville	5,856
Burns	1,289	West Almond	462
Caneadea	1,250	Willing	924
Centerville	813	Wirt	1,061
Clarksville	743		
Cuba	2,376	Total	40,216
Friendship	2,050		

---

*Belmont, in the town of Amity, is the county seat.

HISTORICAL ASSOCIATIONS

Allegany County was formed from Genesee County in 1806. It was named from the Allegheny River, and the word is of Seneca origin, meaning "crane." Its first white visitor — although as a captive — was Mary Jemison, the famous "white woman of the Genesee." The two western tiers of towns in this county were included in the Holland land purchase, and the remaining part belonged to the Morris reserve.

Settlement in the county began at about 1800. The rich lands to the north attracting so much attention, the development of this county was very slow for many years. The construction of the Genesee Valley Canal and of the Erie Railroad gave an impulse to improvement and offered an opportunity to convey the rich products of the extensive pine forests to a profitable market.

DEVELOPMENT OF INDUSTRY

After the land had been partly cleared by the production of ashes, lumbering began and continued for many years to be the leading industry. As the primitive pine forests disappeared the business of the county became more and more exclusively agricultural. From about 1827 to 1835 there were many changes of location among the settlers in some sections, which, to a certain extent, resulted in a new set of inhabitants with a decided improvement in the general thrift and intelligence of the people. Farming then began to be conducted in a more thorough and systematic manner. Grains were produced, sheep and cattle were raised, and butter and cheese were manufactured.

At present, dairying is the principal agricultural business of practically the entire county, and most farms have comparatively large dairies. During the last few years increasing attention has been given to the production of grains in order to maintain the dairies. Beans are grown extensively, Hume leading in their production. Potatoes are grown in most localities, Andover producing the greatest amount. Considerable attention is given to the poultry business in many sections. Hay is extensively raised and large shipments are annually sold in New York and Philadelphia. In the two southern tiers of towns, with the exception of Genesee, the production of petroleum oil is of considerable importance and gives profitable results.

CLIMATE AND RAINFALL

The meteorological records here given for Allegany County were taken at Alfred at an elevation of 1,720 feet. The present observer is Professor J. N. Norwood.

Average dates for the last killing frost in spring and the first in fall are May 17 and September 24, respectively, giving a growing season of 130 days.

The following table, compiled from observations covering the period 1899 to 1916, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT ALFRED

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	23.6	60	1890	—22	1914	3.17	3.00	1911	16.6
February	22.3	60	1890	—21	1899	2.24	1.30	1894	14.8
March	29.4	70	1894	—10	1891	2.85	2.40	1900	13.4
April	43.7	84	1896*	8	1898	2.92	2.10	1894	6.9
May	54.9	92	1911	22	1911	3.95	2.20	1893	0.1
June	63.5	96	1895	28	1913	3.09	3.00	1911	......
July	67.5	98	1911	35	1898	3.57	2.00	1898	......
August	65.3	94	1899	38	1896*	3.72	2.50	1893	......
September	59.7	92	1913	26	1911*	3.17	4.34	1890	......
October	47.6	82	1891	18	1895	3.08	2.91	1896	0.6
November	36.2	70	1901	—1	1891	2.73	1.98	1899	8.2
December	25.9	60	1901	—16	1899	2.73	1.50	1894*	14.5
Year	45.0	98	1911	—22	1914	37.22	4.34	1890	75.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is mostly an upland, the ridges being broken by the deep valleys of the streams. The highest summits, in the southern part, are 500 to 800 feet above the valleys and 2,000 to 2,500 feet above tide. The slopes are usually too steep for profitable cultivation. Toward the north the county becomes less mountainous and spreads out into a hilly region. The Genesee River flows northeast through the county, forming a deep valley bordered by abrupt hillsides. The main ridges, which are parallel to the river and about ten miles distant, form watersheds that divide the waters flowing north from those flowing south. The streams east of the east ridge are tributaries of the Susquehanna and those west of the west ridge flow into the Allegheny.

The rocks of the county belong to the shales and sandstones of the Portage and Chemung groups. In various localities the sandstone furnishes an excellent building material, and in Rushford it is quarried for grindstones. The soil on the uplands is generally a heavy clay, frequently stony. In the valleys the soil is mostly a gravelly loam and alluvium.

DESCRIPTION BY TOWNSHIPS

ALFRED: The surface is generally hilly, broken by narrow valleys.

The highest summits are 500 to 800 feet above the streams. Caneadea Creek is the principal stream. The soil on the hills is a clay or shaly loam, and in the valleys a gravelly loam.

Products: Dairy products, oats, hay, potatoes, barley, and buckwheat.

The average value of farm land is $55 an acre.

ALLEN: The surface is a hilly upland divided into ridges by the valleys of the streams. The highest summits are 500 to 700 feet above the valleys. Wigwam Creek, a tributary of the Genesee, is the principal stream. The soil on the uplands is clay underlaid by hardpan. In the valleys it is a gravelly loam and alluvium.

Products: Dairy products, hay, oats, barley, and buckwheat.

The average value of farm land is $16 an acre.

ALMA: The surface is broken and mountainous. Honeoye Creek and its branches, which flow through deep narrow ravines, form the drainage of the town. The soil on the uplands is a clayey and sandy loam. In the valleys it is a gravelly loam and alluvium.

Products: Oats, barley, buckwheat, dairy products, potatoes, and oil.

The average value of farm land is $41 an acre.

ALMOND: The surface is mostly an upland separated into distinct ridges by the deep valleys of Canisteo River and smaller streams. The highest summits are 500 to 800 feet above the valleys. The soil is a gravelly and clayey loam.

Products: Dairy products, potatoes, poultry, oats, and garden truck.

The average value of farm land is $27 an acre.

AMITY: The surface is hilly and broken, the summits rising 500 to 800 feet above the valleys. The Genesee River and its

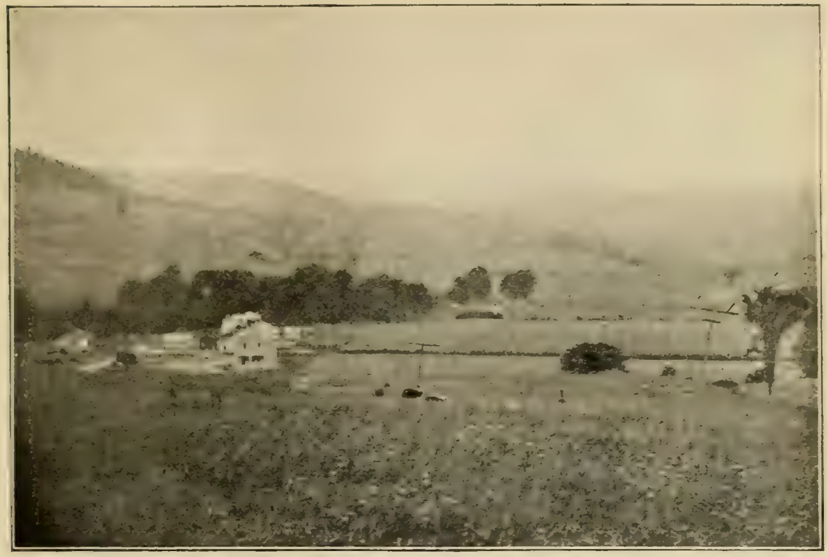


Fig. 29.— View in Valley West of Andover, Allegany County

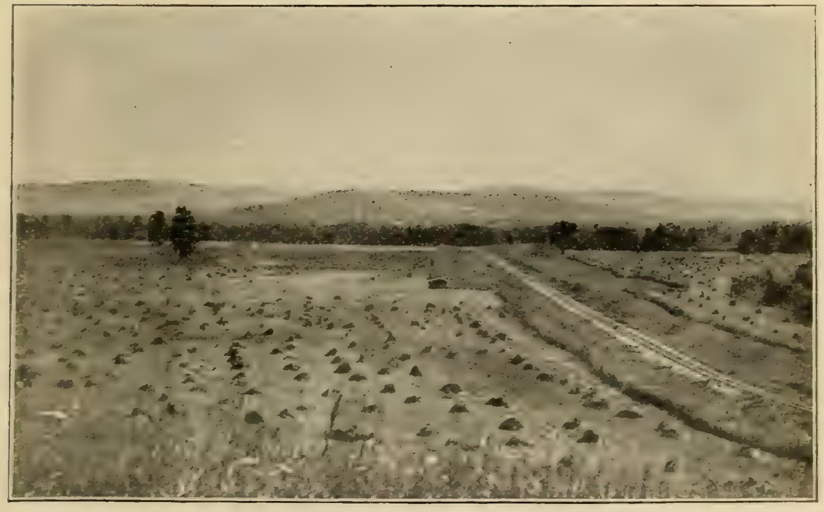


Fig. 30.— Farm Land near Belvidere

tributaries are the principal streams, the valleys of which are narrow and bordered by steep hillsides. The soil is principally a clayey and sandy loam.

Products: Dairy products, hay, grain, beans, and buckwheat.

The average value of farm land is $60 an acre.

ANDOVER: The surface is very hilly, Dyke Creek and its tributaries forming the principal drainage. The soil is chiefly a heavy loam resting on hardpan.

Products: Potatoes, dairy products, oats, hay, and buckwheat.

The average value of farm land is $64 an acre.

ANGELICA: The surface is a hilly upland broken by the deep ravines of streams. Genesee River and its tributary, Angelica Creek, are the principal streams. On the uplands the soil is a clayey loam; in the valleys it is gravelly loam.

Products: Dairy products, barley, oats, hay, buckwheat, and beans.

The average value of farm land is $42 an acre.

BELFAST: The surface is a hilly upland separated into distinct ridges which rise 600 to 800 feet above the streams. The Genesee River flows across the northeast corner, receiving the waters of Black and White creeks. The soil is a clayey loam on the hills and a gravelly loam in the valleys.

Products: Dairy products, hay and grain, and beans and peas for canning.

The average value of farm land is $54 an acre.

BIRDSALL: The surface is principally a hilly upland separated into several distinct ridges. The declivities are usually very abrupt, the highest summits rising from 500 to 800 feet above the valleys. Black Creek is the principal stream. The soil is a clayey loam underlaid by hardpan.

Products: Dairy products, hay, grain, and beans.

The average value of farm land is $15 an acre.

BOLIVAR: The surface is a broken mountainous upland, in some parts too steep for profitable cultivation. The soil on the hills is a reddish clayey loam and in the valleys a gravelly loam.

Products: Hay, dairy products, grain, buckwheat, and oil.
The average value of farm land is $80 an acre.

BURNS: The surface is very hilly and broken, the highest summits being 400 to 700 feet above the valleys. Canaseraga Creek is the principal stream.

Products: Potatoes, beans, dairy products, hay, and grain.
The average value of farm land is $60 an acre.

CANEADEA: The surface is divided into two ridges by the Genesee River which flows north through the town. Caneadea and Crawford creeks flow into the Genesee River from the west. The soil on the highlands is a gravelly and a clayey loam, and in the valleys a gravelly loam and alluvium.

Products: Dairy products, hay, beans, grain, and some winter wheat.
The average value of farm land is $64 an acre.

CENTERVILLE: The surface is a moderately hilly upland. Six Town Creek and its branches form the principal drainage. The soil is a heavy clayey loam.

Products: Dairy products, potatoes, beans, hay, and grain.
The average value of farm land is $21 an acre.

CLARKSVILLE: The surface is a mountainous upland divided into several steep ridges by the narrow valleys of the streams. The highest streams are 700 to 1,000 feet above the valleys. Dodges Creek and its branches form the principal drainage. The soil is generally a heavy clayey loam.

Products: Dairy products, grain, hay, and oil.
The average value of farm land is $24 an acre.

CUBA: The surface is a broken and mountainous upland divided into irregular ridges by the narrow valleys of the streams.

Oil Creek and its branches form the principal drainage. The soil is a clayey and gravelly loam.

Products: Dairy products, hay, and grain.

The average value of farm land is $80 an acre.

FRIENDSHIP: The surface is broken by high mountainous ridges, the summits of which are 600 to 800 feet above the valleys. Van Campens Creek and its branches are the principal streams. The soil is a clayey and gravelly loam.

Products: Dairy products, oats, barley, hay, and some winter wheat.

The average value of farm land is $59 an acre.

GENESEE: The surface is very broken and mountainous, and the highest summits are 1,000 to 1,400 feet above the valleys. The Little Genesee and other streams flow through narrow ravines. The soil is a sandy and clayey loam.

Products: Dairy products, hay, and grain.

The average value of farm land is $40 an acre.

GRANGER: The surface is a hilly upland divided into several distinct ridges. Genesee River, which forms a portion of the western boundary, is bordered by abrupt hillsides 600 to 800 feet high. The soil is a clayey loam on the hills and a gravelly loam in the valleys.

Products: Grain, potatoes, beans, and dairy products.

The average value of farm land is $28 an acre.

GROVE: The surface is a hilly upland divided into several distinct ridges. Chautauqua valley lies in the eastern part and branches of Black and Canaseraga creeks form the principal drainage. The soil on the hills is a clayey loam underlaid by hardpan, and in the valleys it is a gravelly loam.

Products: Grain, potatoes, beans, dairy products, and some winter wheat.

The average value of farm land is $22 an acre.

HUME: The surface is a hilly upland. The Genesee River flows through the southeast corner and forms a portion of the eastern boundary. Along this stream abrupt hills rise to a height of 400 to 700 feet. The other principal streams are Six Town and Cold creeks. The soil is a gravelly and clayey loam.

Products: Potatoes, dairy products, beans, grain, and hay.
The average value of farm land is $67 an acre.

INDEPENDENCE: The surface is a mountainous upland broken by deep narrow valleys. Above these valleys the highest summits rise 800 to 1,200 feet. The soil is principally a gravelly loam with sections of sand.

Products: Dairy products, hay, grain, potatoes, and oil.
The average value of farm land is $35 an acre.

NEW HUDSON: The surface is a hilly upland broken by the valleys extending northeast and southwest. The principal stream is Black Creek. The soil is a gravelly or clayey loam.

Products: Dairy products, hay, and grain.
The average value of farm land is $27 an acre.

RUSHFORD: The surface is a hilly upland divided into two parts by Caneadea Creek, which flows east through the center. The valleys of several smaller streams tributary to this creek divide the highlands into narrow ridges. The soil is a shaly loam underlaid by hardpan.

Products: Dairy products, grain, hay, and fruit.
The average value of farm land is $31 an acre.

SCIO: The surface is a mountainous upland, the highest summits being 700 to 1,000 feet above the valleys. The streams are Genesee River and Knight and Vandemark creeks. The soil is principally a sandy loam.

Products: Dairy products, grain, hay, some wheat, and oil.
The average value of farm land is $39 an acre.

WARD: The surface is a hilly upland, the highest summits being 500 to 800 feet above the valleys. The principal streams are Philips and Vandemark creeks. The soil is a clayey loam on the hill and a gravelly loam in the valleys.

Products: Dairy products, grain, hay, and buckwheat.

The average value of farm land is $14 an acre.

WELLSVILLE: The surface is broken and mountainous, the highest summits being 800 to 1,200 feet above the valleys. The declivities are generally too steep for profitable cultivation. The principal streams are Genesee River and Dyke and Chenunda creeks, which flow through deep narrow valleys. The soil is generally a sandy loam.

Products: Dairy products, potatoes, hay, grain, and oil.

The average value of farm land is $202 an acre.

WEST ALMOND: The surface is a broken elevated upland. The principal streams are Angelica, Black, Phillips and Karr Valley creeks, all of which flow in narrow ravines bordered by steep hillsides. The soil is generally a clayey loam underlaid by hardpan.

Products: Grain, dairy products, and hay.

The average value of farm land is $15 an acre.

WILLING: The surface is a broken and mountainous region, the highest summits being 800 to 1,200 feet above the valleys. The streams are Genesee River and several creeks, all flowing in narrow valleys bordered by steep declivities. The soil is a clayey and sandy loam.

Products: Dairy products, hay, potatoes, grain, and oil.

The average value of farm land is $31 an acre.

WIRT: The surface is a wild mountainous upland divided into three general ridges extending north and south. The streams are headwaters of Van Campens, Little Genesee, and Dodges creeks.

Products: Dairy products, hay, grain, and oil.

The average value of farm land is $42 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

Allegany County is traversed by four railroads which make numerous connections within or just outside the borders of Allegany County.

Two lines of the Erie pass through the county, converging at Hornell in Steuben County and also in the western part of the town of Cuba, Allegany County.

The Pittsburg, Shawmut and Northern Railroad extends from northeast to southwest across the county terminating in Steuben County at both Hornell and Whalen, and in Cattaraugus County at Olean.

The Pennsylvania Railroad between Olean and Rochester passes northeast through this county west of the center.

The Buffalo, Rochester and Pittsburgh between Salamanca and Rochester crosses the extreme northwestern corner of the town of Centerville.

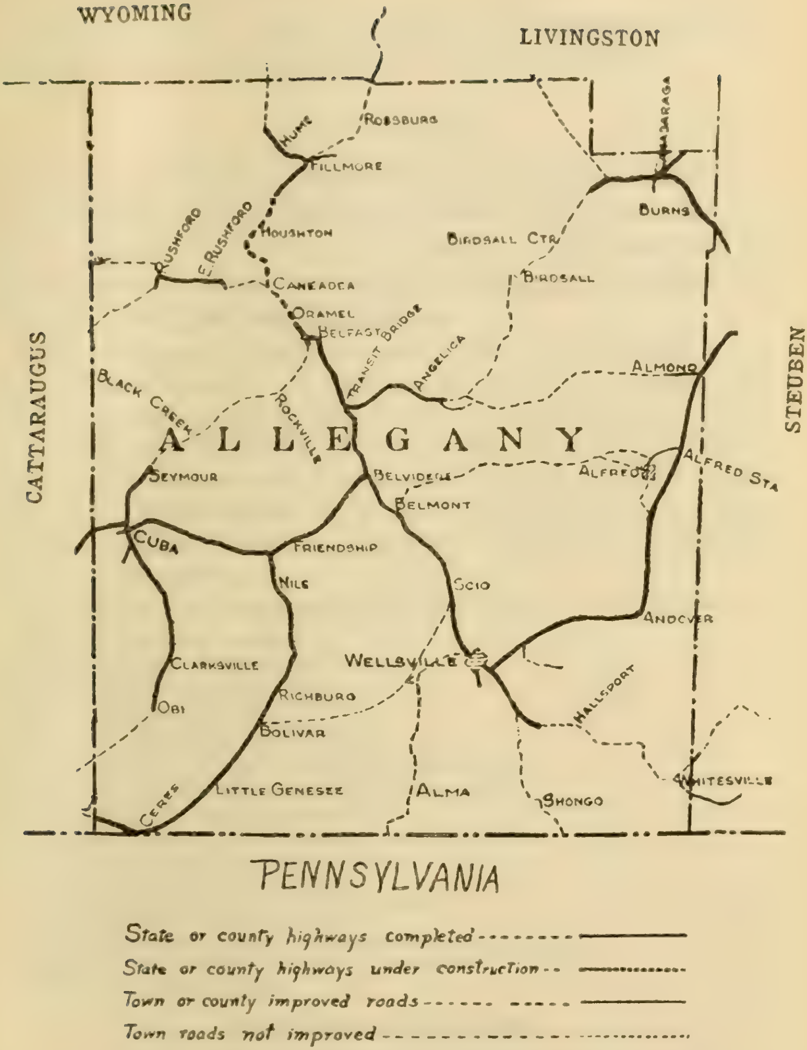
The old lines of the New York and Pennsylvania run from Pennsylvania northeast to Canisteo, crossing the southeastern part of Allegany County. The road is not in use at the present time, nor is the Buffalo and Susquehanna, which extends from Pennsylvania northwest to Wellsville.

An electric road extends from Cattaraugus County through the towns of Genesee and Bolivar to the village of Bolivar.

Improved Highways

An improved highway leading through the southern tier of counties runs from Hornell, Steuben County, through Wellsville, Scio, Belmont, Belvidere, Friendship, and Cuba, Allegany County, to Olean, Cattaraugus County.

Short sections of macadam roads within the county are as follows: From Wellsville to Hallsport; from Belvidere to Transit Bridge, thence east to Angelica and northwest to Belfast, from which point when completed it will extend as far as Hume


WYOMING
LIVINGSTON
CATTARAUGUS
STEUBEN
ALLEGANY
PENNSYLVANIA
ROSSBURG
HUME
FILLMORE
SARAGA
BURNS
RUSHFORD
E. RUSHFORD
HOUGHTON
BIRDSALL CTR
BIRDSALL
CANEADEA
ORAMEL
BELFAST
TRANSIT BRIDGE
ANGELICA
ALMOND
BLACK CREEK
ROCKVILLE
SEYMOUR
BELVIDERE
ALFRED
ALFRED STA
BELMONT
CUBA
FRIENDSHIP
NILE
SCIO
ANDOVER
WELLSVILLE
CLARKSVILLE
OBI
RICHBURG
HALLSPORT
BOLIVAR
LITTLE GENESEE
ALMA
SHONGO
WHITESVILLE
CERES
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

in the northern part of the county; from Friendship to Little Genesee; from Cuba south to Obi, and north to Seymour; from Rushford to East Rushford.

There are in the county 117 miles of completed improved highways, with nine miles additional under construction.

AVAILABLE MARKETS

Potatoes produced in Allegany County are sold principally at the following marketing centers: Andover, Fillmore, Almond, Alfred Station, Wellsville, and Belmont. Large quantities of hay are shipped from the county, the principal markets for which are New York and Philadelphia.

Within Allegany County are about fifty milk establishments, mostly cheese factories. Approximately one-quarter of the milk collected at these points is sold as market milk and cream, much of it being shipped outside of the county. American cheese is extensively manufactured, consuming about 40 per cent. of the milk collected, and amounting to nearly 5,000,000 pounds. Considerable condensed milk is also made. There is one canning factory in the county.

The agricultural organizations of the county are as follows:

Alfred Agricultural Association.
Allegany County Agricultural Society.
Allegany County Ayrshire Club.
Allegany County Beekeepers' Society.
Allegany County Dairymen's League.
Allegany County Farm Bureau Association.
Allegany County Grangers' Cooperative Association.
Allegany County National Farm Loan Association.
Allegany County Poultry Association.
Allegany-Steuben Holstein-Friesian Breeders' Club.
Associated Poultry Breeders of Liberty.
Centerville Cooperative Creamery.
Central National Farm Loan Association.
Cuba Fair and Racing Association.
East Friendship Farmers' Cooperative Association, Inc.
Granges: Pomona and twenty-two subordinate granges.
Wellsville Fair Association.

EDUCATIONAL FACILITIES

At Alfred is located Alfred University, which includes a New York State School of Agriculture. Approved courses of agriculture are given in the public schools at Almond and Belfast, the former including a course in home making.

Schools affording suitable facilities for maintaining approved courses in high school and academic work are located at Alfred, Allentown, Almond, Andover, Belfast, Belmont, Bolivar, Canaseraga, Cuba, Fillmore, Friendship, Richburg, Rushford, Scio, and Angelica.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	585,615 acres
Number of farms	4,937
Per cent of farm land improved	63.8

LIVE STOCK PRODUCTS

Milk sold	14,799,612 gal.
Cream sold	12,859 gal.
Butter fat sold	426,311 lbs.
Butter produced	535,177 lbs.
Cheese produced	11,158 lbs.
Eggs produced	1,181,871 doz.
Wool produced	17,505 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	13,542
Cattle	70,131
Sheep	24,320
Swine	14,062
Poultry	187,579

BEES

Number of colonies	5,620

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	3,108	94,126
Oats	42,151	935,955
Wheat	1,467	28,147
Barley	2,270	39,080
Buckwheat	11,293	170,620
Rye	346	6,385

	Acres	Tons
Hay and Forage	142,154	175,279

Special Crops:	Acres	Quantity
Potatoes	13,412	1,631,123 bu.
Vegetables, other than potatoes	1,352	....
Dry edible beans	392	5,326 bu.
Dry peas	9	270 bu.

Fruits:		
Apples	199,084 trees	238,385 bu.
Peaches and nectarines	341 trees	146 bu.
Pears	10,649 trees	6,571 bu.
Plums and prunes	10,420 trees	1,883 bu.
Cherries	6,019 trees	985 bu.
Quinces	85 trees	10 bu.
Grapes	857 vines	17,822 lbs.
Small fruits	31 acres	72,359 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,574	4,561

LIVE STOCK AND POULTRY

Horses and mules	13,115	12,625
Cattle	62,484	56,326
Sheep	14,708	13,322
Swine	7,249	7,210
Poultry	206,883	170,920

BEES

Number of colonies	2,538	3,273

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	1,844	1,437	19,656
Oats	37,437	39,725	915,562
Barley	3,942	3,643	53,410
Buckwheat	11,479	10,167	108,875
Wheat (winter)	1,516	1,785	31,063
Wheat (spring)	154	606	6,763
Rye	468	599	10,786

	1917	1918	
Hay and Forage:	Acres	Acres	Yield
Alfalfa	1,613	1,786	4,069 tons
Other hay	136,386	132,812	164,167 tons
Corn (ensilage)	11,045	8,317	50,253 tons
Corn (fodder)	....	3,655	....

	1917	1918	
Special Crops:	Acres	Acres	Yield
Field beans	3,700	6,031	50,737 bu.
Cabbage	156	220	2,124 tons
Potatoes	8,770	10,546	766,689 bu.
Roots raised for stock food	....	430	....
Canning factory crops	10	181	....
Other vegetables and garden crops	846	899	....

Fruits:			
Apples	5,754	7,104	60,780 bu.
Peaches	26	39	42 bu.
Pears	52	120	2,073 bu.
Plums	89	78	11,395 lbs.
Cherries	222	148	1,942 lbs.
Quinces	....	2	5 bu.
Vineyard	2	1	182 lbs.
Small fruits	109	139	....

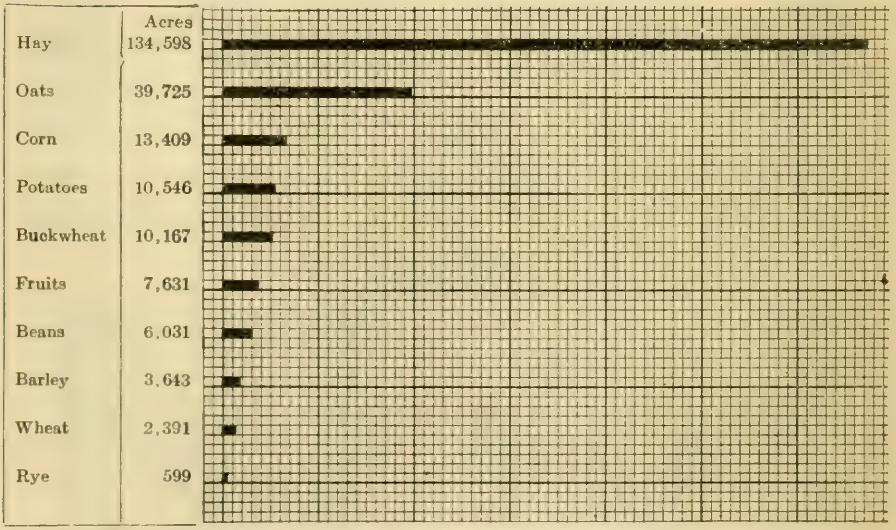


FIG. 31. CHART SHOWING RELATIVE ACREAGE OF CROPS IN ALLEGANY COUNTY

BRONX COUNTY

Bronx County lies in the southeastern part of the state and is bordered on the west by the Hudson River, and on the south by the Harlem River. It forms a part of the city of Greater New York, having been annexed to New York City in 1874. It was set off from Westchester as a separate county in 1912.

The name is taken from the river flowing south through its center to Long Island Sound. The river itself was named in honor of Jonas Bronck, the first settler. In 1640 Bronck, with his wife and family, farm hands and their families, domestic servants, cattle, and miscellaneous goods, landed on Manhattan Island. As this island had been reserved for the private uses of the West India Company, he crossed the Harlem River and purchased 500 acres from the Indians. This property afterward came into possession of the Morris family, and was the birthplace of Gouverneur Morris, the noted Revolutionary patriot.

It is supposed that Anne Hutchinson and her family were the first white settlers of the Bronx after Jonas Bronck.

The death of Nathan Hale is commemorated by a statue standing in City Hall Park near where the tragedy occurred.

There are several parks within the borough of the Bronx, seventeen having distinct names and covering an area of 3,916 acres. The three largest alone — Pelham Bay, Van Cortlandt, and Bronx — cover 3,608 acres.

Two well-known universities, New York and Fordham, are located within the county.

BROOME COUNTY

This county is located in the southern part of the state. Its average extent from north to south is approximately twenty-five miles, and from east to west thirty-five miles. It has an area of 451,200 acres. The population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

*Binghamton (city)	53,668	Maine	1,339
Barker	987	Nanticoke	549
Binghamton	731	Sanford	2,805
Chenango	1,273	Triangle	1,633
Colesville	2,525	Union	15,236
Conklin	942	Vestal	1,688
Dickinson	1,222	Windsor	2,384
Fenton	1,240		
Kirkwood	942	Total	90,641
Lisle	1,477		

* Binghamton is the county seat.

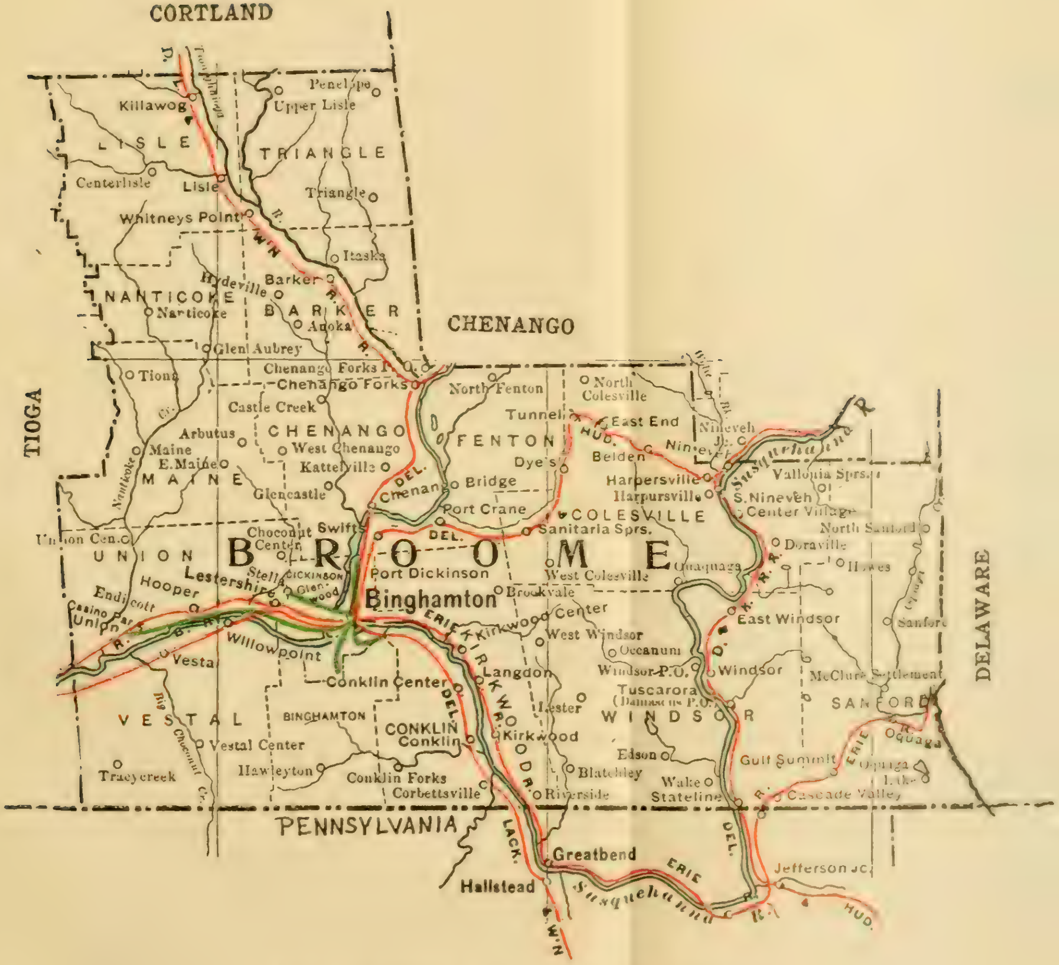
HISTORICAL ASSOCIATIONS

Broome County was set off from Tioga in 1806 and named for Lieutenant Governor John Broome. Binghamton received its name from William Bingham, the proprietor of a large patent of land. The Susquehanna valley, until after the Delawares had been conquered by the Iroquois, was the frontier territory between these two nations. For that reason there was no permanent Indian occupation until after the beginning of the eighteenth century, when it was assigned to the Tuscaroras.

During the Revolution the Indian villages in this section, forty-one in number, were destroyed by armies in command of Generals Sullivan and Clinton. The Indians had adopted some of the methods taught them by the white missionaries and had learned to depend more on agriculture than on hunting. They had not only corn fields, but gardens and apple orchards, and sometimes comfortable houses. The desirability and fertility of the land

---

Note: Binghamton has at present a population of about 66,000.


CORTLAND
CHENANGO
TIOGA
DELAWARE
PENNSYLVANIA
BROOME
LISLE
TRIANGLE
NANTICOKE
BARKER
CHENANGO
FENTON
MAINE
UNION
COLESVILLE
VESTAL
BINGHAMTON
CONKLIN
KIRKWOOD
WINDSOR
SANFORD
Killawog
Penelope
Upper Lisle
Centerlisle
Lisle
Triangle
Whitneys Point
Itaska
Hydeville
Barker
Nanticoke
Anoka
Glen Aubrey
Chenango Forks
Tioga
Castle Creek
Arbutus
West Chenango
Maine
E. Maine
Kattelville
Glencastle
Union Cen.
Chocoqut Center
Swift
Lestershire
Stella
Dickinson
Glenwood
Port Dickinson
Binghamton
Hooper
Endicott
Casino Park
Union
Vesta
Willowpoint
Conklin Center
Conklin
Vestal Center
Traceycreek
Hawleyton
Conklin Forks
Corbettsville
North Fenton
North Colesville
Tunnel
East End
Nineveh
Belden
Harpersville
Bridge
Port Crane
Dye's
Sanitaria Sprs.
West Colesville
Brookvale
Center
Kirkwood
West Windsor
Oecanum
Langdon
Windsor P.O.
Windsor
Tuscarora
Lester
Edson
Blatchley
Riverside
Wake
Stateline
Greatbend
Hallstead
S. Nineveh
Center Village
Vallonia Sprs.
North Sanford
Doraville
Howes
East Windsor
Sanford
McClure Settlement
Gulf Summit
Oquaga
Oquaga Lake
Cascade Valley
Jefferson Jc.
Susquehanna R.
Chenango R.
ERIE
DEL.
LACK.
HUD.
D. L. & W.

Map of Broome County, Showing Townships

Red, railroads; green, electric roads

in this locality attracted the soldiers, and after the return of peace they were not slow to take advantage of the opportunities offered for settlement in the Susquehanna valley. It is stated that 250 survivors of the Revolution came and made homes for themselves and families in the region we now call Broome County.

The prosperity of the county was materially aided by the improvement of transportation facilities for heavy and bulky articles through the completion of the Chenango Canal, which connected with the Erie Canal at Utica and made possible direct communication with the settlements east and west. Fortunately for commercial interests, the Albany and Susquehanna Railroad was opened before the Chenango Canal was abandoned.

DEVELOPMENT OF INDUSTRY

The early settlers found lumbering as well as agriculture to be a profitable industry. The rivers of Broome County were famous waterways for log and lumber rafts. Saw mills were numerous in many sections, and a large part of their products were shipped down the river to markets in Pennsylvania and Maryland.

As the land was cleared it was turned to general agricultural purposes, and the fine grazing lands were found to present excellent opportunities for the raising of cattle and sheep.

The present types of farming followed in Broome County may be classed as general, dairy, and trucking for the local markets. Most of the hill farmers keep live stock, including dairy cattle, and derive their incomes chiefly from this source, but also from the sale of potatoes, hay, and buckwheat, and occasionally from fruits. On a considerable number of farms the receipts from wholesale milk are the main sources of cash income. Besides the milk consumed in the city and villages, considerable quantities are sent out over the three railroad systems, chiefly to New York City.

In the river valleys truck farming is practiced on some of the best soils, but the annual production of vegetables and fruits is not sufficient to supply the local needs throughout the year. Most of the truck farmers are prosperous, and some of the general farmers add one or more truck crops to their sources of income with profit.

As a source of cash income, poultry is important on many of the general farms. A few farmers make chickens their main source of income. Swine are few in number and are usually kept as a market for unsalable products and for a supply of meat for the farm family. Sheep are more numerous than swine, although they are not found on so many farms.

Commercial and manufacturing interests are of considerable importance.

CLIMATE AND RAINFALL

The meteorological station in Broome County is located west of Binghamton at an elevation of 790 feet, observations being conducted by the United States Weather Bureau.

Average dates for the last killing frost in spring and the first in fall are May 6 and October 3, respectively, giving a growing season of 150 days.

The following table, compiled from observations covering the period 1890–1916, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT BINGHAMTON

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	24.1	70	1906	—28	1893	2.34	1.91	1915	11.6
February	22.6	61	1903	—21	1908	2.30	1.93	1914	13.6
March	32.4	80	1907	—11	1900	2.81	1.94	1900	10.6
April	45.2	88	1915	15	1894	2.46	1.69	1898	2.2
May	56.9	94	1911	23	1903	3.19	2.24	1910	T.
June	65.2	95	1895	31	1913	3.10	2.47	1915	......
July	69.9	98	1911	40	1898	3.34	4.19	1915	......
August	67.1	99	1916	35	1895	3.52	2.53	1903	......
September	61.6	94	1896	27	1904	2.97	2.38	1896	......
October	49.9	87	1905	17	1893	2.78	2.19	1896	T.
November	38.4	76	1909	5	1895	1.98	2.21	1910	4.9
December	27.9	68	1914	—18	1894	2.39	2.36	1901	10.7
Year	46.8	99	1916	—28	1893	33.18	4.19	1915	53.6

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is generally diversified, consisting of rolling and hilly uplands, broad river intervales, and the valleys of small streams. The hills in the center and west are rounded and arable to their summits. The narrow valleys that break the continuity of the ridges are bordered by gradually sloping hillsides. The valleys of the Susquehanna and the Chenango are narrow at the upper part of the course, gradually expanding into broad intervales. The valley of the Delaware on the eastern border is narrow, and is bordered by steep hills, as are also the valleys of the Tioughnioga and the Otselic. The highest land is in the southern part, where the highest points rise from 1,600 to 1,800 feet. The soil along the river intervales is generally very fertile, consisting of deep sandy and gravelly loam mixed with disintegrated slate and vegetable mold. The narrow valleys of the small streams are also fertile.

The soil on the hills in the north and west consists principally of gravelly loam intermixed with clay and disintegrated shale and is well adapted to grazing. The sides of the hills in the south and east are similar, but their summits are generally covered with clay and hardpan.

DESCRIPTION BY TOWNSHIPS

BINGHAMTON: The surface is hilly in the south, while the northern part embraces the wide intervales extending along the Susquehanna and Chenango rivers at and near their junction. The hills are 300 to 400 feet above the river and are generally arable to their summits. The soil in the valley is a deep rich alluvial and gravelly loam. On the hills it is a fine quality of slaty loam.

Products: Milk and potatoes.

The average value of farm land is $15 an acre.

BARKER: The surface consists of a high broken plateau, divided by the valley of the Tioughnioga River. The hillsides are in some places very steep, while the summits spread out into a broken region. The valley of the Tioughnioga River is very narrow, but is excellent land. Halfway Brook flows through a narrow valley in the eastern part of the town. In the valleys the soil is a rich alluvium and gravelly loam; that on the hills is a clayey loam mixed with disintegrated slate and shale.

Products: Milk, potatoes, and hay.

The average value of farm land is $20 an acre.

CHENANGO: The surface includes the intervale of the Chenango River — also several high ridges extending in a north and south direction and separated by the narrow valleys of small streams. The hills rise from 300 to 600 feet above the valleys. Castle and Cattle creeks, tributaries of the Chenango River, are the principal streams. On the hills in the north the soil is a gravelly loam mixed with disintegrated slate and underlaid by hardpan; further south it becomes a deeper and richer gravelly loam. It is productive, but from its moist character has been largely devoted to grazing.

Products: Milk, buckwheat, potatoes, hay, and truck crops.

The average value of farm land is $35 an acre.

COLESVILLE: The surface consists principally of a high broken upland divided by the deep valley of the Susquehanna River. The summits of the uplands rise from 400 to 700 feet above the valleys. In the valleys the soil is a deep, fertile, gravelly loam. On the summits of the hills it is generally clay and slate.

Products: Milk, potatoes, hay, and buckwheat.

The average value of farm land is $15 an acre.

CONKLIN: The surface consists of the fine broad intervale of the Susquehanna River and the high broken uplands on the west. The summits of the hills are 400 to 600 feet above the valleys, and the slopes are very steep. Little Snake Creek, which flows through the southern part, has a narrow valley bordered by steep hills. The soil on the hills is hard clay and gravelly loam largely intermixed with slate. In the valleys the soil is a deep rich alluvium and gravelly loam.

Products: Milk, potatoes, hay, buckwheat, oats, and truck crops.

The average value of farm land is $30 an acre.

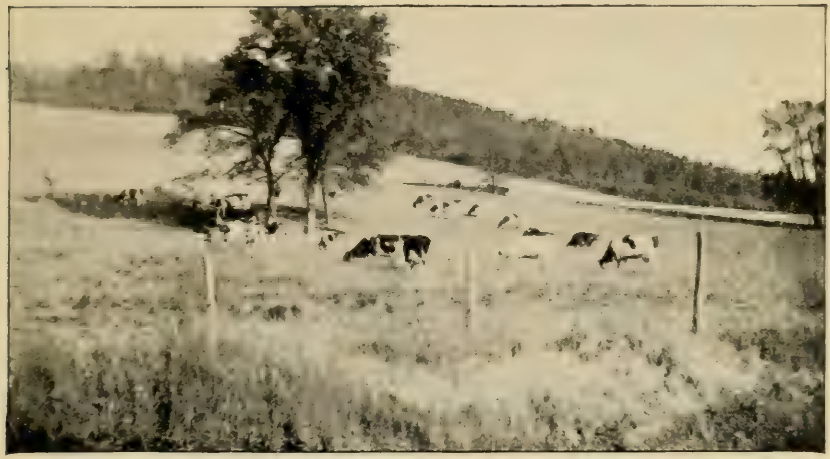


FIG. 32.— COWS AT PASTURE IN TOWN OF CHENANGO, BROOME COUNTY

FIG. 33.— HAY CROP IN TOWN OF UNION, BROOME COUNTY

DICKINSON: The surface consists of the valley of the Chenango River on the east and a hilly, broken region in the west. The soil on the hills is a gravelly loam mixed with slate; in the valleys it is alluvium.

Products: Milk, buckwheat, potatoes, hay, and truck crops.

The average value of farm land is $30 an acre.

KIRKWOOD: The surface includes the fine broad valley of the Susquehanna and the uplands on the east. The hills rise more gradually than on the west side of the river, reaching a height of from 400 to 600 feet. The soil on the hills is a hard clay and gravelly loam largely intermixed with slate. In the valley it is a deep rich alluvium and gravelly loam.

Products: Milk and potatoes.

The average value of farm land is $20 an acre.

LISLE: The surface is mostly a hilly and broken upland divided by the valley of Tioughnioga River. The hills rise in steep slopes from 400 to 700 feet above the river. Dudley Creek flows east through the center, its narrow valley breaking the continuity of the west ridge. In the valleys the soil is a rich gravelly loam, while on the hills it is largely clay and slaty gravel underlaid by hardpan.

Products: Milk, potatoes, and hay.

The average value of farm land is $23 an acre.

MAINE: The surface consists of ranges of hills divided by several narrow valleys generally extending north and south. The principal streams are Nanticoke, Bradley, and Croker creeks. The soil is a gravelly loam largely intermixed with the underlying slate.

Products: Milk, buckwheat, potatoes, oats, and poultry.

The average value of farm land is $23 an acre.

NANTICOKE: The surface consists of an upland broken by narrow ravines. The highest hills are from 1,200 to 1,400 feet above tide. The town is drained principally by the two branches of Nanticoke Creek, which flows south through the center. The soil on the hills is a slaty loam underlaid by hardpan.

Products: Milk, buckwheat, potatoes, oats, and hay.
The average value of farm land is $15 an acre.

Fenton: The surface consists of a high rolling upland on the east bank of Chenango River. The Chenango valley is very narrow, the hills rising abruptly to an elevation of 500 to 700 feet above the river. Page Brook flows south through the center of the town, dividing the uplands into two distinct ridges. The soil in the valleys is a fine rich gravelly loam and alluvium. On the hills it is a clayey and slaty loam underlaid by hardpan.

Products: Milk, hay, and potatoes.
The average value of farm land is $22 an acre.

Sanford: The surface is principally occupied by the high, mountainous range between the Delaware and Susquehanna rivers. The summits rise from 600 to 900 feet above the valley, and the declivities are generally very steep. The narrow valley of Oquaga Creek, which flows south through the center of the town, separates the highlands into two parts. In the valleys the soil is a fertile gravelly loam; on the hills it is a cold clayey loam underlaid by hardpan.

Products: Milk, buckwheat, oats, and potatoes.
The average value of farm land is $25 an acre.

Triangle: The surface consists of a hilly broken upland divided by the valleys of Otselic River and Halfway Brook. The summits of the hills are 300 to 500 feet above the valleys. The soil is generally a gravelly loam.

Products: Milk, potatoes, and hay.
The average value of farm land is $20 an acre.

Union: The surface consists of the Susquehanna intervale and the hilly region to the north. The highlands are nearly centrally divided by the deep valley of Nanticoke Creek. In the valley the soil consists of mixed clay, sand, gravelly loam, and alluvium, and is very productive. The hills, which have a rich soil of slaty and gravelly loam, are cultivated to their summits.

Products: Milk, potatoes, hay, and truck crops.

The average value of farm land is $35 an acre.

VESTAL: The surface consists of the Susquehanna River intervale and the hilly region immediately south of it. Big Choconut Creek flows north through the center. The soil on the hills is a fine quality of slaty loam, and in the valleys it is a deep rich, gravelly loam and alluvium.

Products: Milk, hay, potatoes, and buckwheat.

The average value of farm land is $20 on the hills; in the valleys it ranges from $30 to $75 an acre.

WINDSOR: The surface includes the valley of the Susquehanna and the high ridges on either side. On the east side of the valley the hills rise from 400 to 800 feet above the river, culminating in several sharp ridges. On the west the hills are generally less elevated, although the highest summits attain an elevation equal to those on the east. Oquaga Hill in the northeast is one of the the highest peaks. The soil is a deep, rich, gravelly loam in the valleys and a slaty loam underlaid by clay and hardpan on the hills.

Products: Milk, potatoes, hay, and buckwheat.

The average value of farm land is $26 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The Erie road enters the town of Sanford from Delaware County and takes a bend, which passes through Susquehanna and Greatbend in Pennsylvania. It again enters the county in the southern part of Kirkwood and extends through Binghamton to the west.

The main line of the Delaware, Lackawanna and Western enters the county from Pennsylvania and extends along the valley of the Susquehanna through Binghamton and west into Tioga County.

Other lines of this road connecting with the main line at Binghamton and forming a junction at Chenango Forks in the town of Chenango extend — one to Utica, and the other through Cortland and Syracuse to Oswego.

The Delaware and Hudson from Albany branches at Nineveh, one line reaching Binghamton and one turning south into Pennsylvania. An electric road traverses the section between Binghamton and Union.

Improved Highways

Improved highways extend from Binghamton as follows:

1. North through Whitney Point to Upper Lisle.
2. North and east into Chenango County, a branch at Port Crane extending to Chenango Forks and to Greene in Chenango County.
3. Southeast to Scranton and Wilkes-Barre, Pennsylvania, branching to the east and extending across the county into Delaware County.

Between Windsor and Harpersville another road connects the second and third roads mentioned.

4. Southeast to Corbettsville and west to Owego.

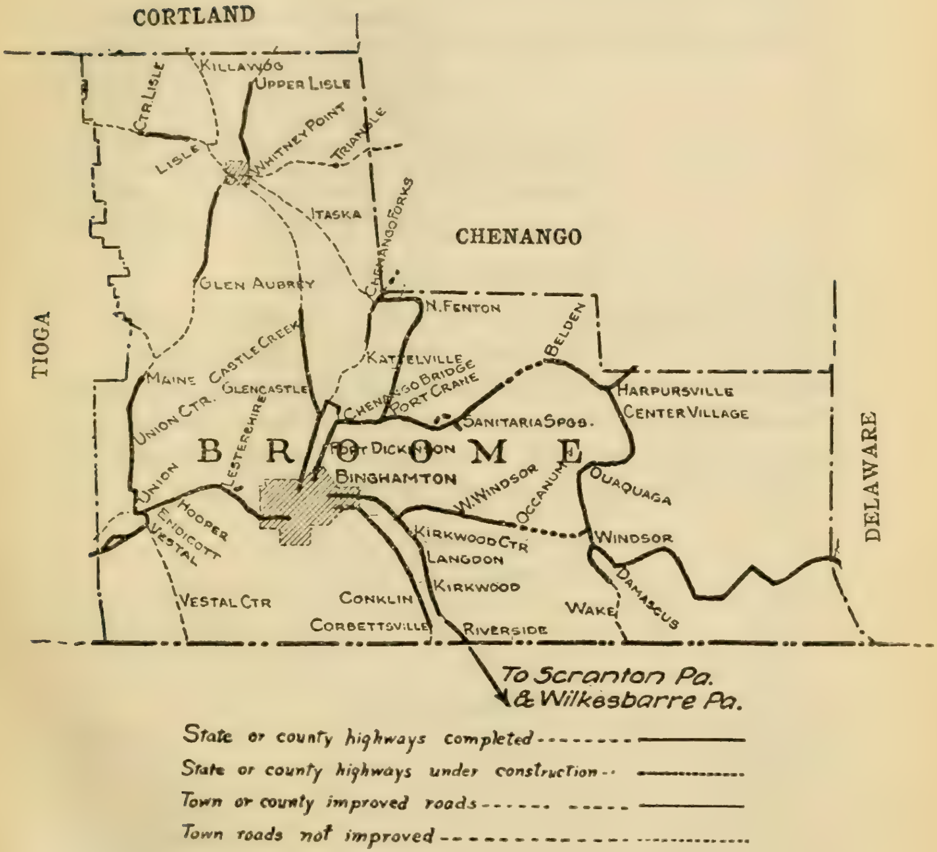
From Union an improved highway extends north to Whitney Point.

There are in the county 141 miles of completed improved highways with 17 miles additional under construction.

AVAILABLE MARKETS

Binghamton, which is the principal local market, is a railroad center at the junction of the Susquehanna and Chenango rivers. In addition to a large trade in coal, lumber, and flour, it has extensive manufactures. A state hospital is located here.

The neighboring points of Johnson City and Endicott furnish excellent marketing facilities. At both of these places the manufacture of shoes is a rapidly growing business. A public market is maintained at Johnson City throughout the entire year, being open three days a week. At Endicott and Binghamton public markets are open during the summer season. Surplus farm produce raised in Broome County finds a ready market in Scranton, Wilkes-Barre, and New York.


CORTLAND
KILLAWOG
UPPER LISLE
CTR. LISLE
LISLE
WHITNEY POINT
TRIANGLE
ITASKA
CHENANGO FORKS
CHENANGO
GLEN AUBREY
TIOGA
N. FENTON
BELDEN
CASTLE CREEK
MAINE
GLENCASTLE
KATTELVILLE
CHENANGO BRIDGE
PORT CRANE
HARPURSVILLE
CENTER VILLAGE
UNION CTR.
LESTERSHIRE
SANITARIA SPGS.
B R O O M E
PORT DICKINSON
BINGHAMTON
DELAWARE
UNION
HOOPER
ENDICOTT
VESTAL
W. WINDSOR
OCCANUM
OUAQUAGA
WINDSOR
KIRKWOOD CTR
LANGDON
KIRKWOOD
DAMASCUS
VESTAL CTR
CONKLIN
WAKE
CORBETTSVILLE
RIVERSIDE
To Scranton Pa. & Wilkesbarre Pa.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Of the milk collected at the milk establishments in Broome County two-thirds is sold as market milk or cream. About 20 per cent. of the milk is manufactured into condensed and evaporated milk, amounting to nearly 10,000,000 pounds. Malted milk is manufactured to some extent.

The agriculture organizations of the county are as follows:

Binghamton Industrial Exposition.
Binghamton, Johnson City, and Endicott Milk Producers' Association.
Broome County Agricultural Society.
Broome County Beekeepers' Association.
Broome County Dairymen's League.
Broome County Farm Bureau Association.
Broome County National Farm Loan Association.
Broome County Sheep Owners' Association.
Granges: Pomona and twelve subordinate granges.
Lisle Cooperative Association, Inc.
Whitney Point Cooperative Dairymen's Association.

EDUCATIONAL FACILITIES

Approved courses in agriculture and home making are given in the high school at Endicott. Eight additional schools in the county are registered as having suitable facilities for maintaining an improved course in high school and academic work, located at the following points: Binghamton, Chenango Forks, Deposit, Johnson City, Lisle, Endicott, Whitney Point, and Windsor.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	411,475 acres
Number of farms	4,017
Per cent of farm land improved	73.4

LIVE STOCK PRODUCTS

Milk sold	11,381,529 gal.
Cream sold	2,213 gal.
Butter fat sold	547,404 lbs.
Butter produced	410,291 lbs.
Cheese produced	2,964 lbs.
Eggs produced	1,318,670 doz.
Wool produced	5,645 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8,672
Cattle	45,620
Sheep	9,600
Swine	7,615
Poultry	184,377

BEES

Number of colonies	3.312

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	2,742	85,215
Oats	12,950	278,170
Wheat	211	4,497
Barley	57	1,842
Buckwheat	7,894	154,982
Rye	745	12,244

	Acres	Tons
Hay and forage	108,135	113,789

Special crops:	Acres	Quantity
Potatoes	7,106	708,114 bu.
Vegetables, other than potatoes	1,446	....
Dry edible beans	10	233 bu.
Dry peas	2	42 bu.

Fruits:		
Apples	115,582 trees	142,037 bu.
Peaches and nectarines	1,420 trees	472 bu.
Pears	9,262 trees	6,498 bu.
Plums and prunes	8,901 trees	3,524 bu.
Cherries	11,094 trees	3,054 bu.
Quinces	35 trees	4 bu.
Grapes	4,922 vines	94,653 lbs.
Small fruits	146 acres	298,871 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,915	3,400

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	8,667	7,242
Cattle	44,610	41,664
Sheep	5,584	4,189
Swine	4,728	4,194
Poultry	188,204	143,410

BEES

Colonies	1,817	1,700

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	1,455	1,680	30,461 bu.
Oats	14,171	12,059	251,923 bu.
Barley	325	359	3,750 bu.
Buckwheat	5,988	5,478	65,183 bu.
Wheat (winter)	737	488	6,664 bu.
Wheat (spring)	123	285	2,866 bu.
Rye	634	717	7,042 bu.
Hay and forage:			
Alfalfa	229	489	1,183 tons
Other hay	82,489	75,419	87,443 tons
Corn (ensilage)	4,897	3,538	23,571 tons
Corn (fodder)	....	1,193	....
Special crops:			
Field beans	279	346	1,266 bu.
Cabbage	738	325	2,121 tons
Potatoes	5,230	6,363	293,267 bu.
Roots raised for stock food	....	166	....
Canning factory crops	86	108	....
Other vegetables and garden crops	751	774	....
Fruits:			
Apples	3,609	4,351	75,288 bu.
Peaches	53	48	191 bu.
Pears	83	88	2,663 bu.
Plums	44	74	24,250 lbs.
Cherries	66	65	60,420 lbs.
Vineyard	51	3	2,700 lbs.
Small fruits	246	202	....

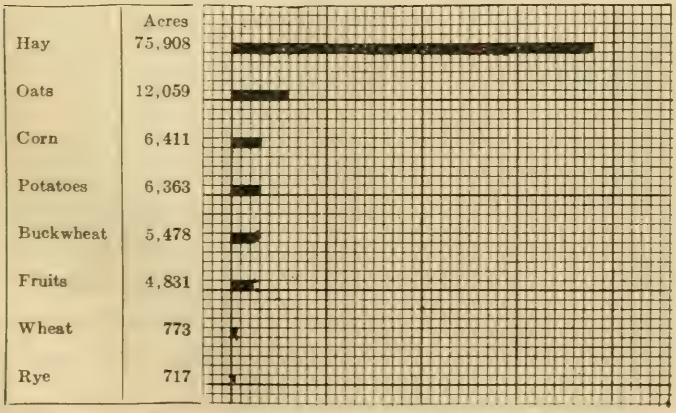


FIG. 34. CHART SHOWING RELATIVE ACREAGE OF CROPS IN BROOME COUNTY

CATTARAUGUS COUNTY

This county lies in the southern tier, and, with the exception of Chautauqua, is the most southwesterly county in the state. It has an area of 859,520 acres. Its extent from north to south is approximately thirty-four miles, and from east to west thirty-eight miles. The population according to the census of 1915 is shown in the following table:

Population by Cities and Townships

(Census of 1915)

Olean (city)	17,925	*Little Valley	1,836
Salamanca (city)	8,370	Lyndon	549
Allegany	3,356	Machias	1,575
Ashford	1,524	Mansfield	867
Carrolton	1,260	Napoli	783
Cold Spring	722	New Albion	2,152
Conewango	1,142	Olean	1,324
Dayton	1,770	Otto	839
East Otto	1,062	Perrysburg	1,123
Elko	302	Persia	1,800
Ellicottville	1,844	Portville	2,455
Farmersville	976	Randolph	2,578
Franklinville	3,174	Red House	700
Freedom	1,124	Salamanca	414
Great Valley	1,513	South Valley	497
Hinsdale	1,090	Yorkshire	1,639
Humphrey	625		
Ischua	775	Total	72,756
Leon	925		

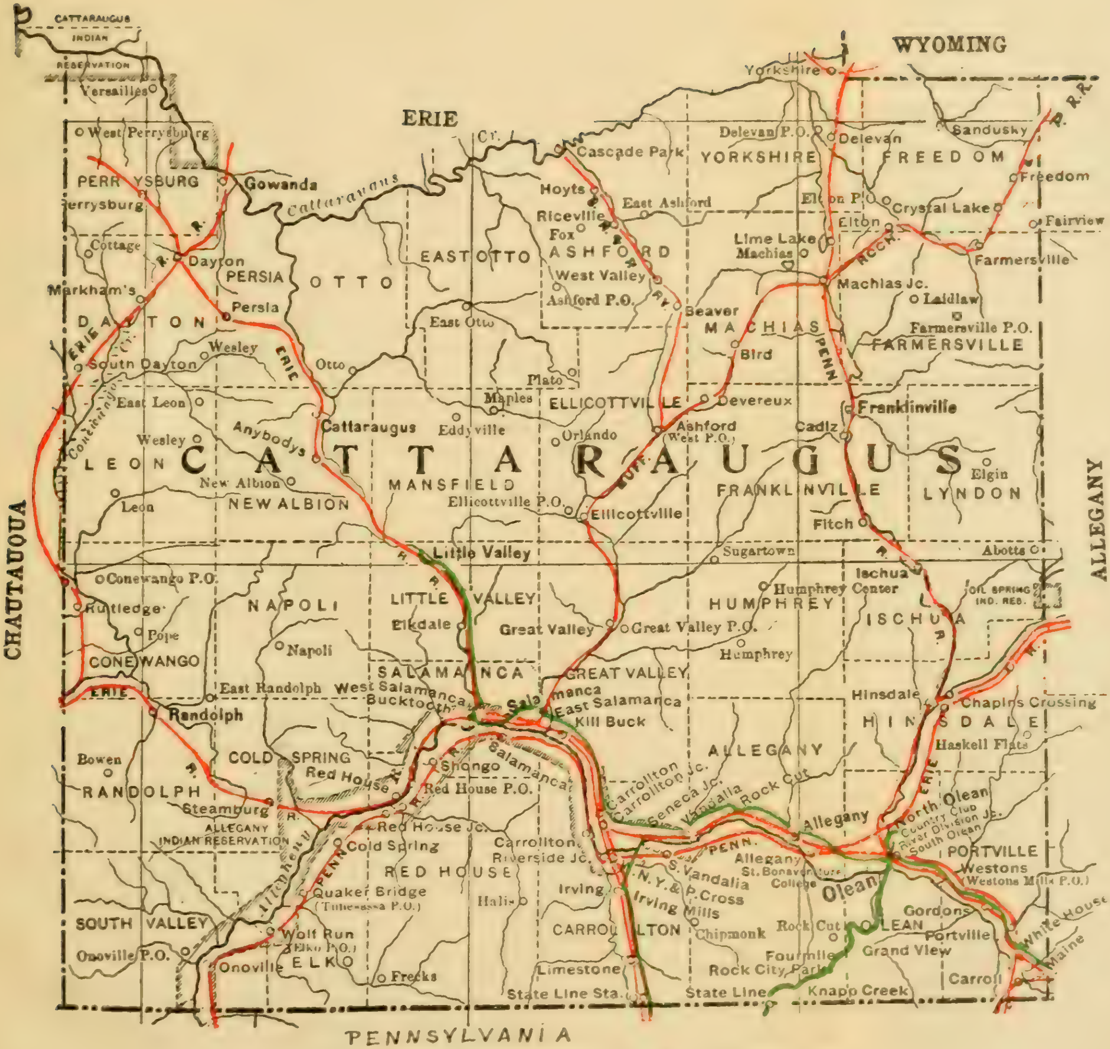
* Little Valley, in this town, is the county seat

HISTORICAL ASSOCIATIONS

Cattaraugus County was formed from Genesee in 1808. The name is of Seneca origin, signifying "where oozed mud falls." The territory was included in that ceded by the Six Nations to the Holland Land Company. The first white settlement was made in 1798, when the Philadelphia Quakers established a mission in the present town of South Valley. For three years these

---

Note.—Olean has at present a population of 20,500, and Salamanca, 9,000.


WYOMING
ERIE
CHAUTAUQUA
ALLEGANY
PENNSYLVANIA
CATTARAUGUS
CATTARAUGUS INDIAN RESERVATION
PERRYSBURG
DAYTON
PERSIA
OTTO
EAST OTTO
ASHFORD
YORKSHIRE
FREEDOM
MACHIAS
FARMERSVILLE
LEON
NEW ALBION
MANSFIELD
ELLICOTTVILLE
FRANKLINVILLE
LYNDON
CONEWANGO
NAPOLI
LITTLE VALLEY
GREAT VALLEY
HUMPHREY
ISCHUA
SALAMANCA
HINSDALE
RANDOLPH
COLD SPRING
RED HOUSE
ALLEGANY
SOUTH VALLEY
ELKO
CARROLLTON
OLEAN
PORTVILLE
ALLEGANY INDIAN RESERVATION
OIL SPRING IND. RES.
Gowanda
Dayton
Persia
Cattaraugus
Little Valley
Salamanca
Randolph
Ellicottville
Franklinville
Olean
Machias Jc.
Delevan
Yorkshire
Freedom
Sandusky
Fairview
Farmersville
Ischua
Hinsdale
Allegany
Portville
Steamburg
Onoville
Versailles
West Perrysburg
Perrysburg
Cottage
Markham's
South Dayton
Wesley
East Leon
Leon
New Albion
Conewango P.O.
Rutledge
Pope
East Randolph
Bowen
Cold Spring
Quaker Bridge
Wolf Run
Frecks
Otto
East Otto
Hoyts
Riceville
Fox
East Ashford
West Valley
Ashford P.O.
Beaver
Bird
Devereux
Ashford (West P.O.)
Orlando
Plato
Maples
Eddyville
Cascade Park
Elton
Lime Lake
Crystal Lake
Laidlaw
Cadiz
Fitch
Elgin
Sugartown
Abbotts
Humphrey Center
Humphrey
Great Valley
Napoli
Elkdale
Kill Buck
Shongo
Red House P.O.
Carrollton
Riverside Jc.
Irving
Irving Mills
Chipmonk
Rock City Park
State Line
Knapp Creek
Limestone
Haskell Flats
Chapins Crossing
Gordons
Westons
Carroll
White House
Maine
Erie
Penn.
B. R. & P. R.R.

Map of Cattaraugus County, Showing Townships

Red, railroads; green, electric roads

people endeavored to improve the condition of the Indians; they then ceased their efforts, owing largely to the opposition of the noted chief Red Jacket. In 1839, an attempt by the Holland Company to deprive the Senecas of their lands led the Indians to appeal to their former friends for aid, and in 1842, through the influence of the Quakers, 53,000 acres of land were restored to the Indians. At the present time there is a school at Quaker Bridge in the town of Elko which is maintained by the Quakers for the Indians.

The Allegany Indian Reservation occupies a portion of the Allegheny river valley in the southern part, and a portion of the town of Perrysburg in the northwestern part is occupied by the Cattaraugus Reservation.

A permanent settlement was made at Olean by Major Adam Hoops and his brother Robert from Albany in 1804. For many years a large share of western immigration was by way of the Allegheny River and Pittsburgh. Being at the head of boat navigation on the river, and on the Genesee Valley Canal, Olean speedily became a place of importance. When the Erie Canal was completed, travel was diverted from this route and improvements advanced very slowly. Up to the time of the construction of the New York, Lake Erie and Western Railroad, Cattaraugus County had no means of reaching the eastern markets, and what little surplus in agricultural products the farmers had was nearly consumed by the cost of hauling it to Buffalo with their teams, the trips requiring four or five days under favorable circumstances. The successful completion of railroads, therefore, inspired the inhabitants of Cattaraugus and Chautauqua counties with a new enterprise.

At Ellicottville was located the land office of the Holland Land Company. This village was also the first county seat.

About 1875, the town of Allegany shared with Pennsylvania in the oil excitement. Many unsuccessful experiments were made, but in 1893 it was estimated that there were about 1,000 producing wells in the town.

DEVELOPMENT OF INDUSTRY

Lumbering was the leading industry of this section for many years, the lumber being formed into rafts and floated down the Allegheny River. At one time as much as 30,000,000 feet annually floated to Pittsburgh. Those engaged in the business were compelled to purchase supplies at Pittsburgh, which were brought up the river in flat boats. This laborious process was so expensive that the cost of transportation of 100 pounds of merchandise from Pittsburgh to Olean was $1.25, while in the opposite direction it was done for twelve and one-half cents.

When patches of land were cleared, either by burning logs for the ashes or by floating them away to the lumber market, cereals were planted, including wheat, rye, buckwheat, corn, and oats. Potatoes were also raised in abundance for home use. As oats and corn could be produced most profitably, these formed the chief crops, finding a market in the lumber camps in the southern part of the county and in Pennsylvania. From 1850 until the last quarter of that century these products were shipped to distant markets; but they have since been consumed principally at home by the large dairies. After the completion of the railroads, large quantities of buckwheat and potatoes found markets in Buffalo, Rochester, and eastern cities. Buckwheat is now shipped from practically every town.

In localities where maple trees were abundant, the manufacture of maple sugar was an important industry until about 1870; since then, although it is still of local importance, the business has become gradually less. Maple timber is fast disappearing in the county because of the fact that large quantities are being made into last blocks and shipped to our eastern markets and to Europe. Boxes for local cheese factories are all made within the county.

Having come from an orchard country, the pioneers lost no time in planting fruit trees, generally choosing the lowlands for this purpose, which usually proved unsatisfactory. Later, apple orchards were set on the higher ground, which established the reputation of Cattaraugus as an apple-producing county. Grapes are not extensively grown, except in the town of Perrysburg, a portion of which, lying within the Chautauqua grape belt, pro-

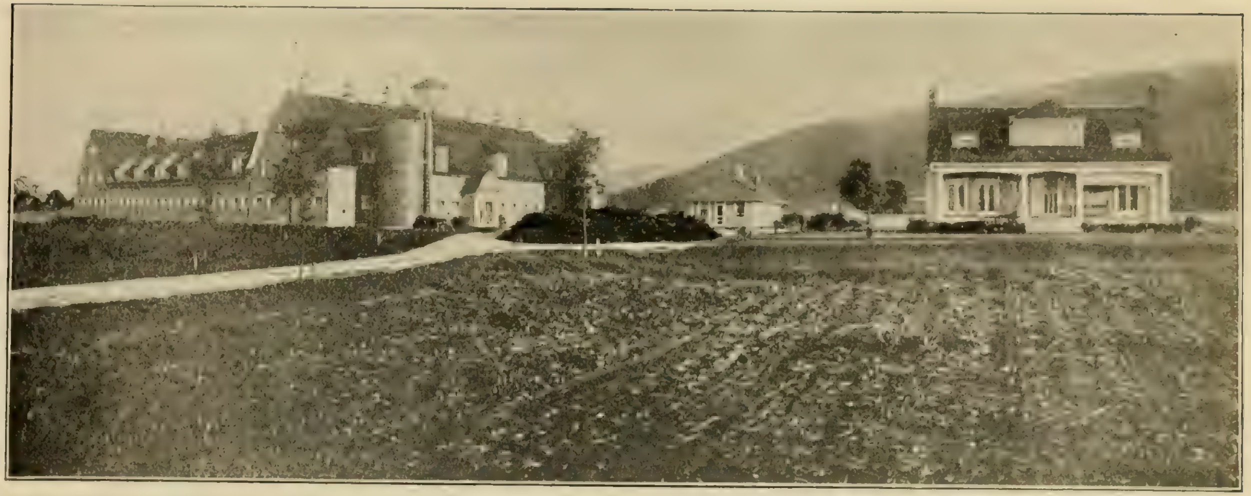


FIG. 35.—A PROGRESSIVE DAIRY FARM AT SALAMANCA, CATTARAUGUS COUNTY

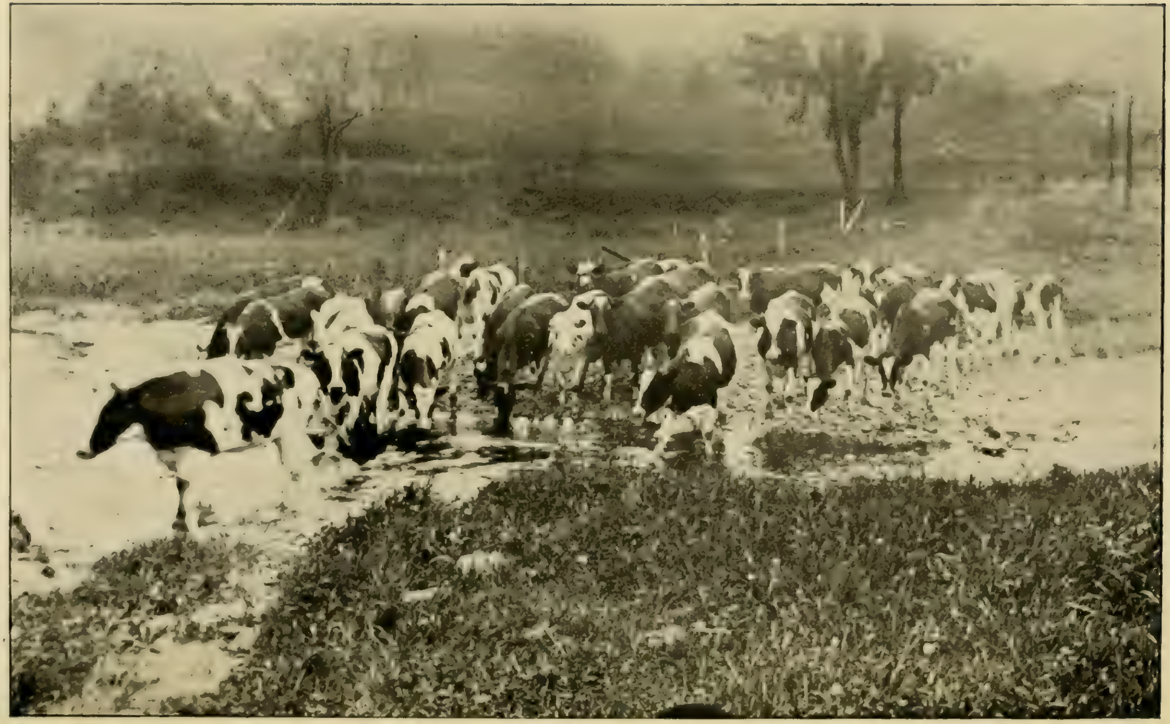


Fig. 36.— Holsteins on Fancher Farm, Salamanca

duces grapes abundantly. Excellent pears are grown in limited quantities. Plums thrive and bear well, as do also cherries and berries of all kinds.

A large portion of Cattaraugus County is better adapted to grazing than to the growing of grain, vegetables, or fruit, and it early became apparent that stock raising would become one of the principal industries. The raising of young stock for market was for a time the leading branch of agriculture. Sheep husbandry was not very successful because of the depredations of wolves. From 1843, the business increased rapidly for twelve or fifteen years, when the dairy industry came to the front. From 1870 to 1880 many new cheese factories were built and dairy interests have since taken the lead in agricultural pursuits.

At Randolph is the Dow Stock Farm, where breeding and developing is extensively carried on. The Fancher Farm, which also has a large live stock interest, is located at Salamanca.

Hay in connection with dairying has become one of the important products of the farm. Not only are vast quantities consumed at home, but a considerable amount is shipped to eastern markets. The shipping of hay is, however, more limited than formerly, owing to the increased amount of dairying.

Oil production, tanning, and the manufacture of glue and cutlery occupy a prominent place in the business of the county.

CLIMATE AND RAINFALL

Climatological records here given for Cattaraugus County were made at Humphrey. The location was one of the highest in the state at which such records have been made, the elevation being 1,950 feet.

Average dates for the last killing frost in spring and the first in fall are May 14 and September 27, respectively, giving a growing season of 136 days.

The following table, compiled from observations covering the period 1884 to 1902, shows both normal and extreme temperatures and precipitation. Maximum and minimum thermometers were not used at Humphrey until June, 1890.

RECORD OF TEMPERATURE AND PRECIPITATION AT HUMPHREY

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	22.7	62	1890	—8	1899*	3.12	1.15	1902	22.1
February.....	22.7	64	1890	—17	1899	3.21	1.74	1894	20.6
March........	29.4	75	1894	—8	1901	2.78	1.25	1900*	16.7
April.........	43.3	85	1896	12	1898	3.02	1.79	1901	8.8
May.........	55.5	89	1895*	24	1902*	4.61	2.29	1894	0.5
June.........	64.5	92	1895*	34	1902	4.60	2.65	1891	......
July..........	68.3	93	1894	39	1898*	4.61	2.90	1897	......
August.......	65.7	93	1899	38	1896	4.42	3.75	1893	......
September....	60.0	90	1897*	29	1896	4.06	1.96	1894	0.3
October......	48.4	86	1893	21	1893	3.35	1.79	1898	2.1
November....	36.4	72	1895	8	1901	3.46	1.50	1890	13.5
December.....	27.4	64	1889	—7	1901	3.21	2.26	1901	19.0
Year.........	45.4	93	1899*	—17	1899	44.45	3.75	1893	103.6

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is a hilly upland, separated by deep valleys into distinct ridges having a general north and south direction. The valleys deepen toward the south, where the hills rise 800 to 1,300 feet, reaching an altitude of 2,500 to 3,000 feet above tide. Many of the hills, though arable to their summits, are too steep for profitable cultivation. Toward the northern border the surface is less mountainous, and the hills spread out into high rolling uplands. Allegheny River enters the southeast corner of the county from Pennsylvania, flows northeast until it reaches the center, and there turns southwest into Pennsylvania. This river and its tributaries form the principal drainage of the county. Cattaraugus Creek forms the northern boundary and Conewango Creek drains the west side of the county. On all the streams are numerous falls.

Drift deposits are found to some extent throughout the county, and beds of clay, alluvium, and muck are found in limited quantities in the valleys. The soil in the valleys is generally yellowish loam composed chiefly of disintegrated sandstone and shale. On the uplands it is clay alternating with sand and gravel, and underlaid by hardpan.

DESCRIPTION BY TOWNSHIPS

ALLEGANY: The surface is a hilly upland broken by the deep valley of Allegheny River, which extends east and west through the center. The slopes of the hills are steep, and the highest summits rise 700 to 900 feet above the valleys. The soil is a shaly and sandy loam on the hills, and a clayey and gravelly loam in the valleys. One of the chief means of revenue in this town is through the production of oil.

Products: Dairy products, truck crops, hay, oats, potatoes, and cabbage.

The average value of farm land is $55 per acre.

ASHFORD: The surface is hilly, with ridges extending generally north and south. The highest points in the southern part are 300 feet above the valleys. Cattaraugus and Buttermilk creeks are the principal streams. The soil is a slaty loam intermixed with gravel and clay.

Products: Hay, oats, corn, and buckwheat.

The average value of farm land is $45 an acre.

CARROLLTON: The surface is a hilly upland. Ball Hill in the southeastern part is 800 feet above the valley. The Allegheny flows through the northern part. On the uplands the soil is a clayey and shaly loam; in the valleys it is a gravelly loam.

Products: Dairy products, hay, oats, and buckwheat.

The average value of farm land is $20 an acre.

COLD SPRINGS: The surface is a hilly, broken upland, the highest summits being 400 to 500 feet above the valleys. The Allegheny flows through the northeast corner, its tributary, Cold Spring Creek, flowing through the center of the town. The soil on the uplands is clayey and slaty loam. In the valleys it is a sandy and gravelly loam.

Products: Potatoes, corn, oats, hay, grain, and dairy products.

The average value of farm land is $35 an acre.

CONEWANGO: The surface in the southwestern and western parts is level and swampy. The remainder of the town is hilly.

It is drained south by the Conewango Creek and several other streams. The soil on the uplands is clay and gravel; on the flats it is gravelly loam.

Products: Dairy products and general farm crops.

The average value of farm land is $55 an acre.

DAYTON: The surface is generally a rolling and hilly upland. It is drained south by two branches of Conewango Creek and other small streams. The soil is a clayey and gravelly loam.

Products: Dairy products, hay, buckwheat, barley, and wheat.

The average value of farm land is $40 an acre.

EAST OTTO: The surface is hilly and broken, Mt. Tug, the highest summit, rising 300 feet above the valley. Cattaraugus Creek forms the northern boundary. The soil is a clayey and gravelly loam, and very productive. A large quantity of fruit, especially apples, is raised.

Products: Hay, oats, buckwheat, corn, and apples.

The average value of farm land is $40 an acre.

ELKO: The surface is broken into high hills and deep valleys. The Allegheny River is the principal stream. From the east the river receives as tributaries Pine and Tunesassa creeks and Wolf Run. Until recently this town has had an immense lumber trade.

Products: Oats, corn, potatoes, and hay.

The average value of farm land is $6 an acre.

ELLICOTTVILLE: The surface is a hilly upland, broken by the deep, narrow ravines of the streams. The principal stream is Great Valley Creek, which flows south through the center. The soil on the hills is a clayey loam. In the valleys it is a gravelly loam.

Products: Dairy products, hay, oats, potatoes, cheese, and condensed milk.

The average value of farm land is $25 an acre.

FARMERSVILLE: The surface is a hilly upland, forming the watershed between the streams flowing northwest into Lake Erie and those flowing east into Genesee River and south into Allegheny River. On the uplands the soil is chiefly a vegetable mold resting on clay, shale, and slate; in the valleys it is a gravelly loam.

Products: Hay, corn, oats, and potatoes.

The average value of farm land is $18 an acre.

FRANKLINVILLE: The surface is undulating and hilly, and the drainage is to the south through several streams, the principal one being Ischua Creek. The soil is a clayey and gravelly loam.

Products: Dairy products, hay, corn, and oats.

The average value of farm land is $35 an acre.

FREEDOM: The surface is a rolling or moderately hilly upland. Clear Creek and the south branch of Cattaraugus Creek are the principal streams. The soil is a clayey and gravelly loam.

Products: Dairy products, milk, hay, and potatoes.

The average value of farm land is $30 an acre.

GREAT VALLEY: The surface of the southern part is a mountainous and hilly upland. The highest summit near the southwest corner is 1,300 feet above the river, and the declivities are generally very abrupt, many of them being too steep for cultivation. In the northeastern part are wide, fertile valleys. The Allegheny River flows through the southwest corner; Great Valley Creek forms the principal drainage. The soil on the highlands is a hardpan mixed with disintegrated slate and shale; in the valleys it is a gravelly loam.

Products: Dairy products, hay, oats, and potatoes.

The average value of farm lands is $20 an acre.

HINSDALE: The surface is a hilly, broken upland. The hills are 500 to 600 feet above the valleys. Ischua and Oil creeks join near the center to form Olean Creek, which flows south through the town. The soil on the uplands is chiefly clay and in the valleys a gravelly loam.

Products: Dairy products, hay, and grains.

The average value of farm land is $40 an acre.

HUMPHREY: The surface is a broken, hilly upland, which is drained by several small streams. The soil on the hills is mostly clay, with an occasional intermixture of sand. In the valleys it is a gravelly loam. In the southwestern part are several producing oil and gas wells.

Products: Dairy products, hay, oats, and potatoes.

The average value of farm land is $15 an acre.

ISCHUA: The surface is a broken and hilly upland, the highest summits being 600 feet above the valley. Ischua Creek flows south through the town. The soil is chiefly clay, with a thin surface mold and some gravelly loam.

Products: Hay, grain, and corn.

The average value of farm land is $25 an acre.

LEON: The surface in the west and northwest is level and marshy, in the remaining parts it is moderately hilly. The town is drained south by Conewango Creek and its tributary. The soil is a clayey, sandy, and gravelly loam.

Products: Dairy products, milk, hay, and buckwheat.

The average value of farm land is $30 an acre.

LITTLE VALLEY: The surface is mostly a hilly upland, which is divided by the deep valley of Little Valley Creek. The highest summits rise 500 to 600 feet above this stream. On the hills the soil is a hard clayey loam; in the valleys it is a gravelly loam.

Products: Hay, oats, corn, and potatoes.

The average value of farm land is $25 an acre.

LYNDON: The surface is hilly, the highest ridges being near the center. The soil is chiefly clay, covered with a light vegetable mold on the hills and a gravelly loam in the valleys.

Products: Hay, oats, and buckwheat.

The average value of farm land is $30 an acre.

MACHIAS: The surface forms a portion of the elevated plateau dividing the waters of Allegheny River from those of Cattaraugus

Creek. The soil is a clayey and gravelly loam, generally of good quality. Large quantities of ice taken from Lime Lake are sent to Buffalo.

Products: Hay, oats and corn.

The average value of farm land is $25 an acre.

MANSFIELD: The surface is hilly, the highest elevations lying in the southeast. The south branch of Cattaraugus Creek flows west through the northern part, and several small streams flow south into the Allegheny. The soil is a hard clayey loam on the uplands, and a gravelly loam in the valleys.

Products: Potatoes, oats, buckwheat, and corn.

The average value of farm land is $30 an acre.

NAPOLI: The surface is a hilly upland, the highest summits being 600 feet above the valley. The principal stream is Cold Spring Creek, a tributary of the Allegheny. The soil is a clayey and gravelly loam.

Products: Hay and grain.

The average value of farm land is $40 an acre.

NEW ALBION: The surface is a hilly upland drained by streams flowing into Cattaraugus Creek on the north and into the Allegheny on the south. The soil is a clayey loam on the hills and a gravelly loam in the valleys.

Products: Milk, hay, grain, and potatoes.

The average value of farm land is $35 an acre.

OLEAN: The surface is a hilly upland divided by the valley of the Allegheny, above which the highest points rise from 500 to 600 feet. The soil in the valleys is loam and on the hills it is stony.

Products: Dairy products, grain, milk, wheat, oats, and corn.

The average value of farm land is $100 an acre.

OTTO: The surface is a hilly, broken upland. It is drained west by Cattaraugus Creek and several of its tributaries. The soil is chiefly a hard clayey loam, with occasional spots of gravelly loam.

Products: Dairy products, hay, oats, buckwheat, and corn.
The average value of farm land is $65 an acre.

PERRYSBURG: The surface is a hilly and broken upland. Cattaraugus Creek forms the northern boundary, and several of its tributaries flow through the town. The soil is a clayey and gravelly loam.

Products: Grapes, milk, tomatoes, fruit, and dairy products.
The average value of farm land is $40 an acre.

PERSIA: The surface is a hilly upland, with a general inclination toward the north. The highest points are about 650 feet above Lake Erie. The principal stream is Cattaraugus Creek, which forms the northern boundary. The soil is a clayey and gravelly loam.

Products: Dairy products, hay, and potatoes.
The average value of farm land is $30 an acre.

PORTVILLE: The surface is mostly a hilly upland, the summits being 500 to 600 feet above the valleys. The Allegheny River flows north and northwest through the town. The soil is a sandy loam.

Products: Dairy products, hay, corn, and oats.
The average value of farm land is $50 an acre.

RANDOLPH: The surface is an undulating and hilly upland, the highest summits being about 400 feet above the valleys. Little Conewango Creek is the principal stream. The soil is mostly a clayey and gravelly loam.

Products: Hay, buckwheat, corn, potatoes, and dairy products.
The average value of farm land is $35 an acre.

RED HOUSE: The surface is a mountainous upland, the highest summits rising 800 feet above the Allegheny River. The tributaries of this river are Red House Creek and Saw Mill Run. The soil of the lowlands is sandy loam, with a mixture of clay on the elevations. The lumber business is important; gas is largely produced along the east side of the town.

Products: General farm crops and some dairy products.

The average value of farm land is $15 an acre.

SALAMANCA: The surface is very hilly, except in the valley of the Allegheny River and its tributaries. The soil in the lowlands, although gravelly, is fertile. On the hills where it is not too rough for cultivation, crops may be profitably grown.

Products: General farm crops.

The average value of farm land is $50 an acre.

SOUTH VALLEY: The surface is broken and mountainous. Allegheny River flows southwest through the town, receiving several tributaries throughout its course. The soil is a clayey loam on the hills and rich gravelly loam in the valleys.

Products: Dairy products and general farm crops.

The average value of farm land is $12 an acre.

YORKSHIRE: The surface is a rolling and hilly upland. Cattaraugus Creek forms the northern boundary. The soil is a clayey and gravelly loam.

Products: Dairy products, hay, oats, corn, and buckwheat.

The average value of farm land is $30 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Cattaraugus County has railway service from four different roads which make numerous connections within the county. Four lines of the Erie Railroad enter Cattaraugus County, one crossing the southern part and connecting with all points east and west. From West Salamanca one of the Erie lines runs northwest to Dunkirk, making connections at Dayton with another line passing from Buffalo to Jamestown. A fourth line runs from Carrollton south into Pennsylvania.

The Pennsylvania Railroad lines traverse the southern part of the county, entering at Allegany Indian Reservation from Pennsylvania, passing east and again turning into Pennsylvania in the southeast corner. At Olean one of the Pennsylvania lines runs through to the north, dividing at Hinsdale into two parts, one running to Rochester and the other to Buffalo.

The Buffalo, Rochester and Pittsburgh extends from Pennsylvania near the Erie lines to Salamanca, branching at that point to West Salamanca. The main line extends north to Ashford in the town of Ellicottville, sending branches from that place to Buffalo and Rochester.

The Pittsburgh, Shawmut and Northern passes southeast from Olean to Allegany County and Pennsylvania.

Electric Roads

The electric lines of the Western New York and Pennsylvania Traction Company extend from Little Valley southeast to Bolivar, Allegany County, branches running from Seneca Junction and Olean into Pennsylvania.

Improved Highways

The trunk line of improved highways enters the county from Cuba, Allegany County, and extends westerly through Olean and Salamanca to Little Valley, Cattaraugus, and East Otto. Additional highways are as follows: From East Olean to Mill Grove; from Salamanca to Great Valley; from Gowanda to Dayton; from Leon to Pope; from East Randolph through Randolph and west to Jamestown.

There are in the county 87 miles of completed improved highways, with 25 miles additional under construction.

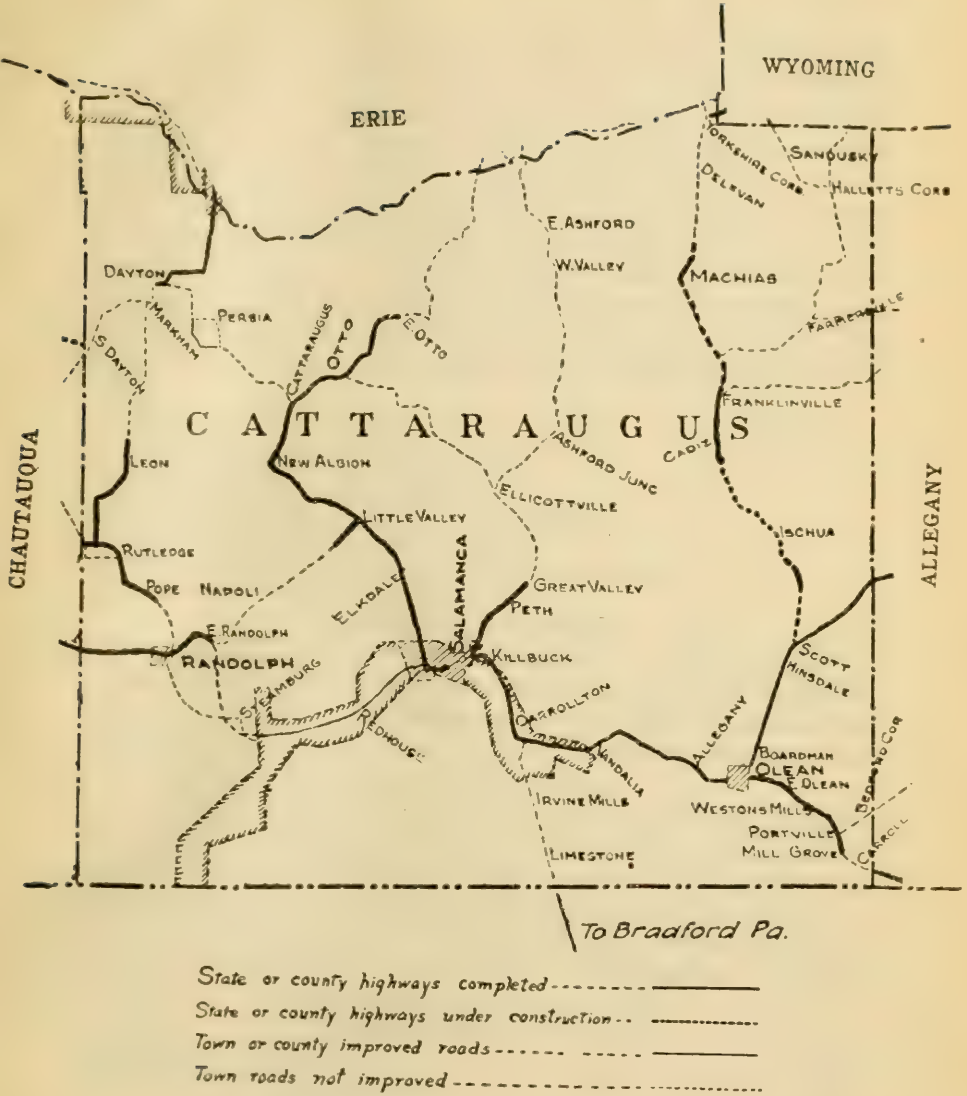
AVAILABLE MARKETS

The two cities of the county, Olean and Salamanca, have large tanning establishments and important oil interests. Extensive tanneries are located at Gowanda; also the largest glue factory in the world.

Franklinville is the seat of an important concern known as the Ontario Knife Company, which manufactures kitchen cutlery.

Little Valley has one of the largest establishments manufacturing pocket knives and razors, known as the Cattaraugus Cutlery Company.

Milk is sent to Buffalo, New York, and Philadelphia.


WYOMING
ERIE
CHAUTAUQUA
ALLEGANY
CATTARAUGUS
Yorkshire Cors
Sandusky
Delevan
Hallotts Cors
E. Ashford
W. Valley
Machias
Farmersville
Dayton
Persia
Markham
S. Dayton
Cattaraugus
Otto
E. Otto
Franklinville
Cadiz
Ashford Junc
Ellicottville
Leon
New Albion
Little Valley
Ischua
Rutledge
Pope
Napoli
Elkdale
Salamanca
Great Valley
Peth
E. Randolph
Randolph
Steamburg
Killbuck
Carrollton
Redhouse
Scott
Hinsdale
Allegany
Vandalia
Boardman
Olean
E. Olean
Bedford Cor
Irvine Mills
Westons Mills
Portville
Mill Grove
Carroll
Limestone
To Bradford Pa.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Other produce shipped out of the county includes apples, hay, buckwheat, and potatoes, also grapes from Perrysburg and its vicinity.

During 1919 over 225,000,000 pounds of milk were delivered at the sixty milk stations and factories of the county. Twenty-five per cent. of this milk is sold as market milk. Over 4,000,000 pounds of American cheese is made, also a considerable amount of foreign types of cheese, a large amount of which is Swiss cheese. The county ranks second in the state in the manufacture of condensed and evaporated milk, making over 45,000,000 pounds in a year. A large part of the milk is manufactured into powered whole and skim milk and powdered cream. The powdered milk and cream industry is rapidly coming to the front, some of the most modern plants being located in this county.

The agriculture organizations of the county are as follows:

Cattaraugus County Agricultural Society.
Cattaraugus County Dairymen's League.
Cattaraugus County Farm Bureau Association.
Cattaraugus County Sheep Breeders' Association.
Central National Farm Loan Association.
Granges: Pomona and thirty-one subordinate granges.
South Dayton Cooperative Association, Inc.

EDUCATIONAL FACILITIES.

At Allegany is located St. Bonaventure's College, and at Franklinville is the Ten Broeck Academy. Approved courses in agriculture are given at Gowanda, Little Valley, Machias, and Randolph. Three of these, namely, Gowanda, Machias, and Randolph, include courses in home making.

The schools in the county registered as having suitable facilities for maintaining approved courses in high school and academic work are located at Allegany, Cattaraugus, Dayton, Delevan, East Randolph Ellicottville, Freedom, Gowanda, Great Valley, Hinsdale, Limestone, Little Valley, Machias, Olean, Portville, Randolph, Salamanca, South Dayton, Franklinville, and West Valley.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	669,960
Number of farms	6,017
Per cent of farm land improved	62.4

LIVE STOCK PRODUCTS

Milk sold	23,000,171	gals.
Cream sold	158,045	gals.
Butter fat sold	505,298	lbs.
Butter produced	549,026	lbs.
Cheese produced	350	lbs.
Eggs produced	1,660,879	doz.
Wool produced	5,108	fleeces

LIVE STOCK AND POULTRY

	Number
Horses	13, 888
Cattle	101, 504
Sheep	9, 709
Swine	17, 854
Poultry	235, 088

BEES

Number of colonies	4, 927

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	5, 665	175, 962
Oats	31, 058	803, 741
Wheat	390	8, 584
Barley	835	16, 799
Buckwheat	9, 592	209, 281
Rye	124	2, 287

	Acres	Tons
Hay and forage	141, 131	237, 093

Special crops:	Acres	Bushels
Potatoes	7, 392	879, 253
Vegetables, other than potatoes	1, 829	....
Dry edible beans	53	1, 203
Dry peas	44	1, 552

Fruits:		Yield
Apples	287, 788 trees	558, 039 bu.
Peaches and nectarines	2, 020 trees	510 bu.
Pears	10, 059 trees	4, 364 bu.
Plums and prunes	8, 973 trees	1, 464 bu.
Cherries	8, 464 trees	1, 379 bu.
Quinces	172 trees	33 bu.
Grapes	180, 292 vines	1, 525, 123 lbs.
Small fruits	137 acres	255, 918 qts.

PRESENT STATUS OF AGRICULTURE

(From census of 1917 and census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	5, 007	5, 082

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	12,346	11,815
Cattle	92,570	82,225
Sheep	4,339	4,241
Swine	10,030	9,024
Poultry	248,505	215,075

BEES

Number of colonies	2,949	2,779

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	3,127	1,985	22,405 bu.
Oats	30,910	31,253	671,257 bu.
Barley	1,781	1,645	16,202 bu.
Buckwheat	8,635	10,437	132,542 bu.
Wheat (winter)	620	618	8,380 bu.
Wheat (spring)	155	764	9,491 bu.
Rye	190	151	1,131 bu.
Hay and Forage:			
Alfalfa	909	974	2,420 bu.
Other hay	110,261	115,167	156,496 bu.
Corn (ensilage)	11,452	9,272	48,273 bu.
Corn (fodder)	....	5,737	....
Special crops:			
Field beans	920	831	3,775 bu.
Cabbage	211	259	2,693 tons
Potatoes	6,005	6,191	483,703 bu.
Roots raised for stock food	....	711	....
Canning factory crops	236	383	....
Other vegetables and garden crops	953	1,161	....
Fruits:			
Apples	7,243	6,716	48,240 bu.
Peaches	43	37	162 bu.
Pears	80	89	2,032 bu.
Plums	69	95	4,401 lbs.
Cherries	96	45	746 lbs.
Quinces	....	....	4 bu.
Vineyard	733	832	4,066,000 lbs.
Small fruits	348	273	....

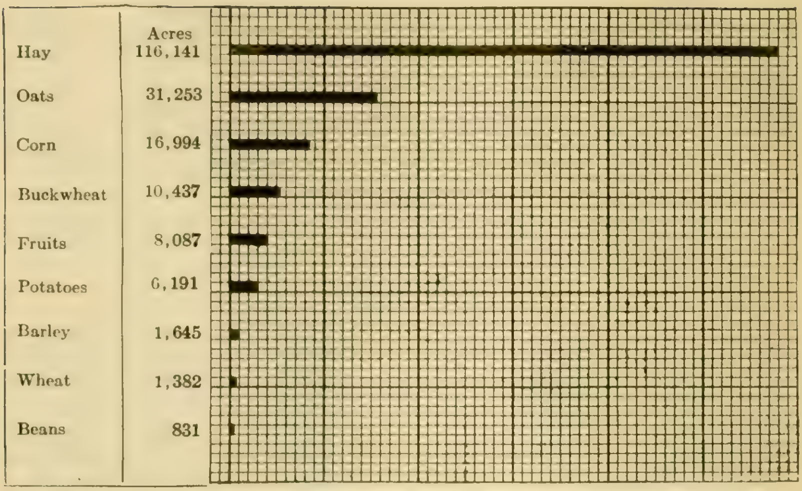
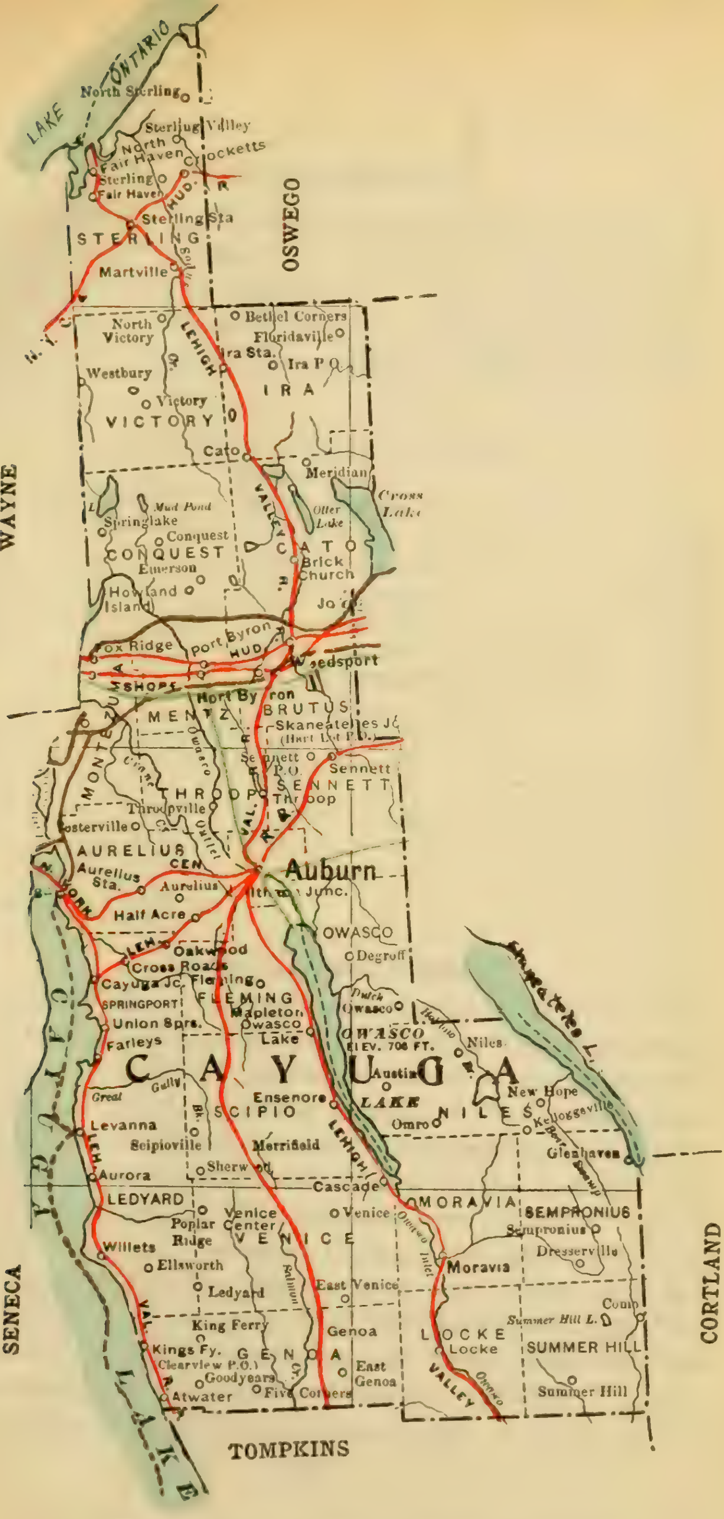


FIG. 37. CHART SHOWING RELATIVE ACREAGE OF CROPS IN CATTARAUGUS COUNTY



LAKE ONTARIO
North Sterling
Sterling Valley
North Fair Haven
Crocketts
Sterling
Fair Haven
HUD. R.
Sterling Sta
STERLING
OSWEGO
Martville
N.Y.C.
LEHIGH
North Victory
Westbury
Victory
VICTORY
Bethel Corners
Floridaville
Ira Sta.
Ira P.O.
IRA
Cato
Meridian
WAYNE
Mud Pond
Otter Lake
Cross Lake
Springlake
Conquest
CONQUEST
Emerson
CATO
VALLEY
Brick Church
Howland Island
Fox Ridge
Port Byron
HUD.
Weedsport
SHOPS
Port Byron
MENTZ
BRUTUS
Skaneateles Jc.
(Hart Lot P.O.)
MONTEZUMA
Sennett P.O.
Sennett
SENNETT
THROOP
Throopville
Throop
Owasco Outlet
Fosterville
AURELIUS
N. YORK CEN.
Aurelius Sta.
Aurelius
Auburn
Ithaca Junc.
Half Acre
OWASCO
Degroff
LEH.
Oakwood
Cross Roads
Cayuga Jc.
Fleming
FLEMING
SPRINGPORT
Mapleton
Union Sprs.
Owasco Lake
Dutch Owasco
Farleys
OWASCO
ELEV. 706 FT.
Niles
Skaneateles L.
CAYUGA
Austin
Great Gully
Ensenore
SCIPIO
OWASCO LAKE
New Hope
Kelloggsville
NILES
Levanna
Scipioville
Merrifield
Omro
Glenhaven
Sherwood
LEHIGH
Aurora
Cascade
LEDYARD
MORAVIA
SEMPRONIUS
Poplar Ridge
Venice Center
Venice
Sempronius
VENICE
Owasco Inlet
Dresserville
Willets
Ellsworth
Moravia
Ledyard
Salmon Cr.
East Venice
Conn
SENECA
Summer Hill L.
King Ferry
Genoa
LOCKE
SUMMER HILL
CORTLAND
Kings Fy.
Clearview P.O.
GENOA
Locke
Goodyears
East Genoa
Summer Hill
Atwater
Five Corners
VALLEY
LAKE
TOMPKINS

Map of Cayuga County, Showing Townships
Red, railroads; green, electric roads; brown, canals

CAYUGA COUNTY

This county lies in the center of the state about half way between Albany and Buffalo in the center of the Finger Lakes region. It has an area of 449,920 acres. From north to south the county extends a distance of 53 miles and from east to west approximately 18 miles. The population is shown in the following table:

Population by Cities and Towns

(Census of 1915)

*Auburn (city)	32,468
Aurelius	1,469
Brutus	2,438
Cato	1,588
Conquest	1,225
Fleming	1,031
Genoa	1,853
Ira	1,467
Ledyard	1,629
Locke	843
Mentz	1,991
Montezuma	914
Moravia	2,239
Niles	1,254
Owasco	1,503
Scipio	1,417
Sempronius	743
Sennett	1,481
Springport	1,502
Sterling	2,469
Summerhill	604
Throop	963
Venice	1,402
Victory	1,258
Total	65,751

---

*Auburn is the county seat.

HISTORICAL ASSOCIATIONS

Cayuga County was erected from Onondaga in 1799. The name is from the Iroquois language, meaning "the place where locusts were taken out." Before the advent of the whites this section formed the chief hunting grounds of the Cayuga nation. The people of this nation were more migratory in their habits than those of the Onondaga and Seneca nations, and they had fewer towns and villages. The principal town or place of council of the tribe was on the shore of Cayuga Lake, near the present site of Aurora. The first white settlers were soldiers that had served during the Revolution. They were principally from New England and the eastern counties of New York. They drew lots on the military tract or purchased soldiers' warrants.

Note: Auburn has at present a population of 36,000.

The first immigration was by the way of Oneida Lake and river and from the south by the way of Cayuga Lake. In 1796 a state road extending from Whitestown to Geneva by way of Auburn was cut through. In 1800 the Cayuga bridge was built; the new route speedily became the great highway of western immigration, and the population steadily and rapidly increased. After the close of the Revolution a great impulse was given to its growth by the completion of the Erie Canal. In 1815 Auburn was the largest village in central or western New York; Rochester and Syracuse had not then been incorporated as villages, and Buffalo had been reduced to ashes.

At about 1840 the production of silk by convicts in Auburn prison was attempted and for some years promised to be a successful employment. It was found, however, that the quality of the product of prison labor could not be maintained and the experiment was abandoned.

DEVELOPMENT OF INDUSTRY

The whole county is well adapted either to the raising of grain or to pasturage. Cayuga County may be called principally a hay- and grain-producing area, although special crops are raised to a considerable extent. Although wheat was for years the principal crop, it was for a time largely replaced by other grains. According to the 1918 census, however, Cayuga stands fifth in the production of winter wheat. It is grown generally in the county with the exception of the southeastern part. The principal wheat area is a large strip extending from the northern part of the county south on the west side of Owasco Lake to the southern boundary.

The 1918 census placed this county at the head in the production of buckwheat and barley. These crops are produced principally in the southern part in the towns of Scipio, Ledyard, Venice, and Genoa. Niles also produces considerable barley.

Corn is grown generally throughout the county. The areas producing the largest amount lie in the northern and central parts, including the towns of Conquest, Brutus, Mentz, Montezuma, and Throop, and in the southern part, including Ledyard, Venice, and Genoa. The oat crop is very important, an area of heavy production lying to the northwest of Auburn. There is also a large acreage in the towns of Scipio and Niles. A greater acreage of hay is grown than of any other crop, and Cayuga has become one of the leading counties of this state in the production of alfalfa, ranking third.

Among the minor crops tobacco is important. It has decreased somewhat, but still holds an important place in the agriculture of the towns of Cato and Ira. The production of beans is increasing, particularly in the northern part of the county. Cabbage and potatoes are grown to a considerable extent, principally in three different sections of the county — the north, center, and south.

Fruit is largely produced principally in two sections, the first of which is in the north, including the towns of Sterling, Victory and Conquest, the second section lying along the shore of Lake Cayuga and including the towns of Aurelius, Scipio, Ledyard, Venice, and Genoa. Cayuga County stands next to Oswego in the production of strawberries.

Live stock is kept on a limited scale, and the non-tillable pasture lands are utilized for this purpose. The number of all kinds of live stock has been reduced since the census of 1910. In purebred cattle, of which there is a goodly proportion, Holsteins and Guernseys are the popular breeds. Dairying is prominent in some sections, particularly in the southeastern part. Sheep are kept principally in the northern and southern portions. Although the number of hogs has been considerably reduced, Cayuga still remains one of the leading hog counties of the state. Considerable attention is also given to raising of poultry.

Honey is an important product, the census of 1910 placing Cayuga first in its production.

Two establishments within the county supply ground limestone for agricultural purposes.

CLIMATE AND RAINFALL

Climatological records for Cayuga County have been taken at Auburn, at an elevation of 715 feet. Observations are being conducted by the Water Board.

Average dates for the last killing frost in spring and the first in fall are May 6 and October 12, respectively, giving a growing season of 159 days.

In the following table records of temperature cover a period of fifty-two years; precipitation, forty-six years; and snowfall, eighteen years.

RECORD OF TEMPERATURE AND PRECIPITATION AT AUBURN

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	24.3	70	1906	—17	1904	2.62	2.00	1913	15.9
February.....	24.2	65	1900	—18	1914	2.17	1.30	1910	15.2
March........	32.8	83	1905	—6	1846	2.46	3.15	1900	11.7
April.........	45.0	87	1902	14	1898	2.58	1.95	1909	3.2
May..........	56.6	95	1911	25	1911	3.60	1.90	1909*	0.2
June..........	65.6	98	1901	35	1913	3.92	2.45	1899	......
July...........	70.5	100	1911	43	1898	3.75	5.94	1914	......
August.......	68.7	98	1899	42	1912*	3.50	2.38	1901	......
September....	61.3	95	1897	31	1904	3.23	2.75	1898	......
October.......	50.0	94	1900	19	1904	3.32	2.15	1906	0.4
November....	38.6	77	1909	8	1905	2.95	2.25	1900	6.8
December.....	29.0	67	1889	—9	1914	2.70	1.50	1902	14.2
Year.........	47.2	100	1911	—18	1914	36.80	5.94	1914	67.6

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of the southern half has a general slope to the north, while the northern half is level or gently undulating and contains numerous marshes. The southern half is rolling and rises gradually until it attains an elevation of from 1,000 to 1,200 feet above tide. Bluff shores border Skaneateles Lake, which lies on the eastern border 840 feet above tide. Owasco Lake near the center is 770 feet above tide, its shores being generally bold and in some places nearly precipitious. Along Cayuga Lake on the western border, which is 387 feet above tide, the land slopes evenly upward from its surface to the summits of the ridges separating the lakes. Seneca River flows eastward through the lowlands that form the northern half of the county. It receives Cayuga and

Owasco outlets from the south and numerous small streams from both the north and south. A swampy region, the Montezuma marshes, extends along the whole course of the river.

The soil in the northern half of the county is generally a fine quality of sandy or gravelly loam intermixed with clay, muck, and alluvium. In the south it is a gravelly and clayey loam and very productive. Moravia, Locke, Summerhill, Sempronius, and a part of Niles are better adapted to pasturage and dairy products than to the production of grain. All the towns in the county north of and including Owasco, Fleming, and Aurelius, excepting the Seneca River basin, are largely composed of drift hills and nearly all have a deep soil. The most extensive plaster beds in the county are found in Springport. Limestone, both for building and quicklime, is extensively quarried in the same town.

DESCRIPTION BY TOWNSHIPS

AURELIUS: The surface is undulating, with a slight inclination toward the north and west. Owasco Outlet flows through the northeast corner. Several small streams rise in the town. The soil is mostly a heavy clay and gravelly loam, with limestone subsoil through the center of the town.

Products: Hay, oats, wheat, alfalfa, cabbage, and corn.
Average values of farm land range from $75 to $125 an acre.

BRUTUS: In the north and west the surface is level, with an average elevation of not more than ten feet above Seneca River, which forms the northern boundary. Many sections immediately bordering the river are swampy. In the southeast the surface is rolling and broken by isolated drift hills 50 to 75 feet above the general level. The soil is a fine quality of sandy and gravelly loam intermixed with clay and alluvium.

Products: Corn, wheat, alfalfa, potatoes, and sheep.
Average values of farm land range from $60 to $150 an acre.

CATO: The surface is level in the south and gently rolling in the north. The ridges, which extend north and south, rise from 150 feet to 200 feet above Lake Ontario. Seneca River forms the southern boundary. The soil is a sandy and gravelly loam mixed with clay and disintegrated red shale.

Products: Wheat, alfalfa, cabbage, potatoes, ensilage corn, beans, tobacco, and sheep.

Average values of farm land range from $25 to $125 an acre.

CONQUEST: The surface is gently rolling, the ridges extending north and south. Along the course of Seneca River in the southern part are marshes. The soil is a sandy loam interspersed with clay underlaid by red shale.

Products: Corn, wheat, cabbage, beans, apples, and some truck crops.

Average values of farm land range from $25 to $80 an acre.

FLEMING: The surface is rolling, with an inclination toward the north and east. The banks of Owasco Lake in the eastern part slope upward for about three-fourths of a mile. The highest elevations in the town are 800 to 900 feet above tide. Sawyer and Crane creeks are the principal streams. The soil is principally a gravelly loam, occasionally intermixed with clay and sand.

Products: Wheat and cabbage.

Average values of farm land range from $60 to $125 an acre.

GENOA: The surface is a rolling region rising gradually from the lake to a height of about 600 feet and divided into ridges by the valleys of Salmon and Little Salmon creeks which extend through the center. Just west of Little Salmon Creek the land rises to a height of about 1,100 feet. Along the banks of Cayuga Lake is a strip of clay. In other parts of the town the soil is a deep rich gravelly loam.

Products: Barley, buckwheat, corn, wheat, hay, apples, and sheep.

Average values of farm land range from $50 to $100 an acre.

IRA: The surface is rolling, and rises 200 to 250 feet above Lake Ontario, which lies at an elevation of 246 feet. The streams

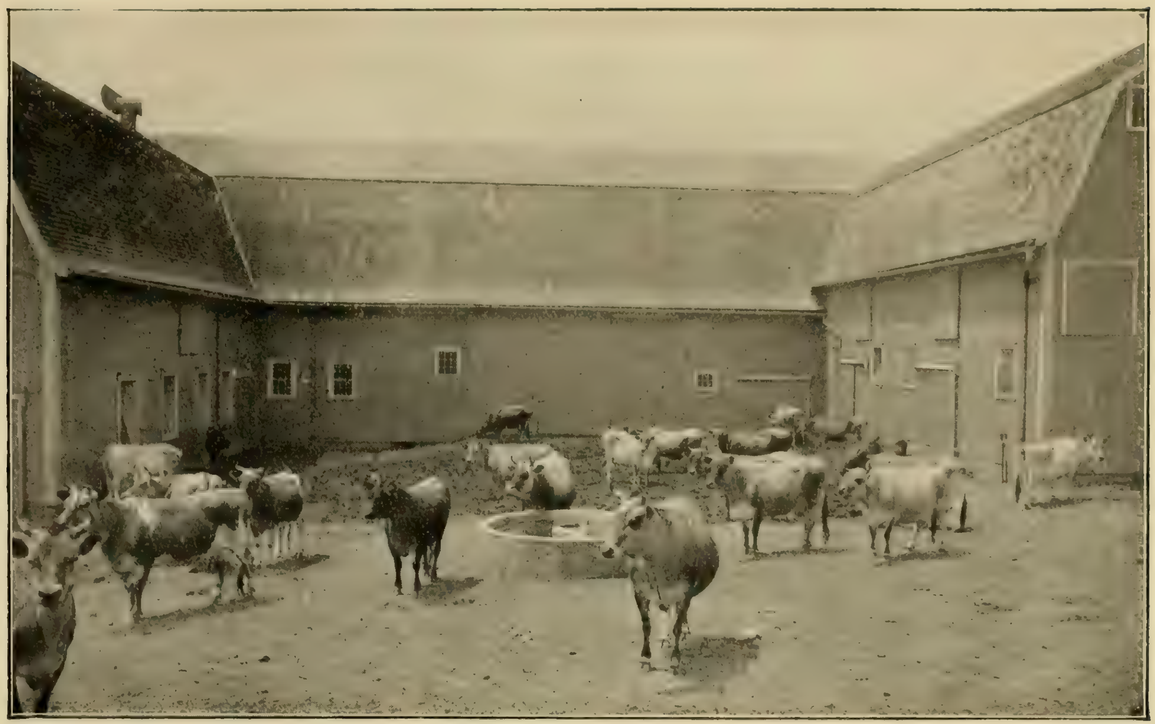


FIG. 38.— HERD OF CAYUGA COUNTY GUERNSEYS

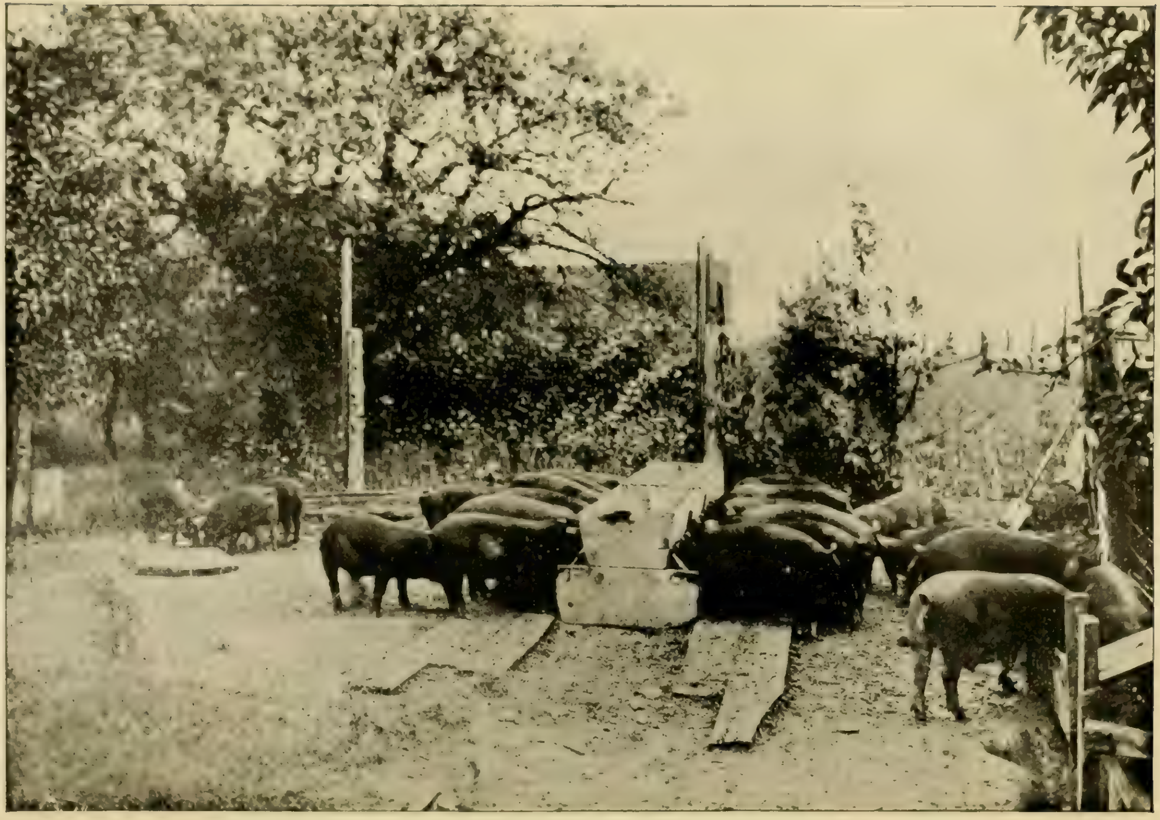


Fig. 39.— Duroc Jersey Pigs on Farm of B. B. Andrews, near Weedsport

are small brooks and creeks. The soil is a sandy loam underlaid by red sandstone and very productive.

Products: Wheat, tobacco, cabbage, ensilage corn, beans, and sheep.

Average values of farm land range from $50 to $100 an acre.

LEDYARD: The surface inclines toward the west, the extreme eastern border being elevated 500 to 600 feet above the surface of the lake. The streams are small, rapid brooks, the principal of which is Paynes Creek in the southern part. The soil is a sandy and gravelly loam, very fertile.

Products: Barley, buckwheat, corn, wheat, apples, and sheep.

Average values of farm land range from $60 to $100 an acre.

LOCKE: The hills bordering Owasco Inlet spread out into a beautifully undulating region with an average elevation of about 900 feet above tide, elevations in the eastern part rising 1,500 to 1,600 feet. The soil is a gravelly loam interspersed with clay.

Products: Hay, potatoes, cabbage, corn, and dairy products.

Average values of farm land range from $30 to $100 an acre.

MENTZ: The surface is generally flat, with a few low sand ridges near the southern border. A swampy region extends along the Seneca River. Owasco Outlet, which flows through the center, is the principal stream. The soil is a clayey, sandy, and gravelly loam.

Products: Corn, oats, wheat, alfalfa, potatoes, and truck crops.

Average values of farm land range from $50 to $150 an acre.

MONTEZUMA: The surface is generally low and flat. The Montezuma marshes extend along the Seneca River on the west side of the county, and the gathering of flag for sale is one of the important industries of the town. The principal stream is Cayuga Brook. The soil is generally a clayey loam.

Products: Hay, corn, oats, wheat, and alfalfa.

Average values of farm land range from $50 to $150 an acre.

MORAVIA: The greater part of the surface is a rolling upland, broken by the deep narrow valleys of Owasco Inlet and its branches. The soil among the hills is a gravelly loam mixed with clay. In the valleys it consists of a deep rich loam formed of gravel and disintegrated limestone and slate.

Products: Hay, cabbage, potatoes, corn, and dairy products.

Average values of farm land range from $60 to $100 an acre.

NILES: The surface is principally a rolling and hilly upland. The highest summits are 800 feet above Owasco Lake. The slopes are gradual toward Owasco Lake but more abrupt toward Skaneateles Lake. The soil is a gravelly and clayey loam.

Products: Oats, barley, hay, potatoes, and cabbage.

Average values of farm land range from $40 to $60 an acre.

OWASCO: The surface is rolling and inclined to the northwest. From Lake Owasco on the west it slopes gradually upward, the highest summits attaining an elevation of 1,000 feet above tide. Owasco Creek and Miller's Brook form the drainage. The soil is a clayey loam.

Products: Hay, cabbage, and potatoes.

Average values of farm land range from $50 to $100 an acre.

SCIPIO: The surface is rolling, the highest summits being 600 feet above Owasco Lake on the east shore. A steep bluff twenty to fifty feet high extends along the lake, from the summit of which the surface slopes gradually upward for about one mile. The streams are small brooks. The soil is a clayey loam.

Products: Oats, barley, buckwheat, wheat, hay, apples, and sheep.

Average values of farm land range from $25 to $100 an acre.

SEMPRONIUS: From the valley of Skaneateles Lake the hills rise abruptly to a hight of 800 to 1,000 feet. From their summits the surface spreads out into a rolling and hilly upland. The highest points reach an elevation of 1,800 feet above tide. The principal streams are Mill, Bear Swamp, and Fall brooks. The soil is a good quality of clayey, sandy, and gravelly loam mixed with disintegrated slate and limestone.

Products: Cabbage and potatoes.

Average values of farm land range from $25 to $50 an acre.

SENNETT: The surface is level or gently undulating, the ridges rising in long gradual slopes. The streams are all small brooks. The soil is a deep, fertile, clayey and sandy loam.

Products: Wheat, alfalfa, cabbage, potatoes, and ensilage corn.

Average values of farm land range from $60 to $100 an acre.

SPRINGPORT:. The surface rises in gradual slopes from Cayuga Lake to the east border, where the elevation is 400 to 500 feet. Sawyer Creek is the principal stream. The soil is a fertile sandy and gravelly loam occasionally intermixed with clay.

Products: Hay, wheat, potatoes, and sheep.

Average values of farm land range from $80 to $125 an acre.

STERLING: The surface is rolling, with a slight inclination toward the north. An extensive swamp lies along the shore of Lake Ontario and another lies in the southern part of the town. The soil is a sandy and gravelly loam, some portions being very stony.

Products: Potatoes, apples, ensilage corn, beans, and sheep.

Average values of farm land range from $30 to $100 an acre.

SUMMERHILL: The surface is a rolling upland, the higher portions of which lie from 1,500 to 1,700 feet above tide. Fall Brook, the principal stream, flows south through the eastern part. The soil is a clayey and gravelly loam.

Products: Hay, cabbage, potatoes, and dairy products.

Average values of farm land range from $20 to $40 an acre.

THROOP: The surface is generally level, broken in a few places by sand and gravel ridges 100 to 150 feet high. The principal streams are Owasco Outlet and Cayuga Brook. The soil is a sandy and gravelly loam.

Products: Corn, oats, wheat, alfalfa, and potatoes.

Average values of farm land range from $60 to $125 an acre.

VENICE: The surface is a rolling upland, the highest summits being 300 to 400 feet above Owasco Lake. Salmon and Little Salmon creeks flow south in deep valleys, dividing the surface into distinct ridges. Although the slopes bordering Owasco Lake and those on the west bank of Salmon Creek are steep, the hillsides generally are long gradual slopes. The soil is a fine quality of clayey and gravelly loam.

Products: Barley, buckwheat, corn, wheat, hay, apples, and sheep.

Average values of farm land range from $40 to $100 an acre.

VICTORY: The surface is gently undulating, the highest points being scarcely fifty feet above the general level. Little Sodus and Red creeks are the principal streams. The soil is a gravelly and sandy loam.

Products: Cabbage, grain, ensilage corn, beans, fruit, and sheep.

Average values of farm land range from $50 to $75 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

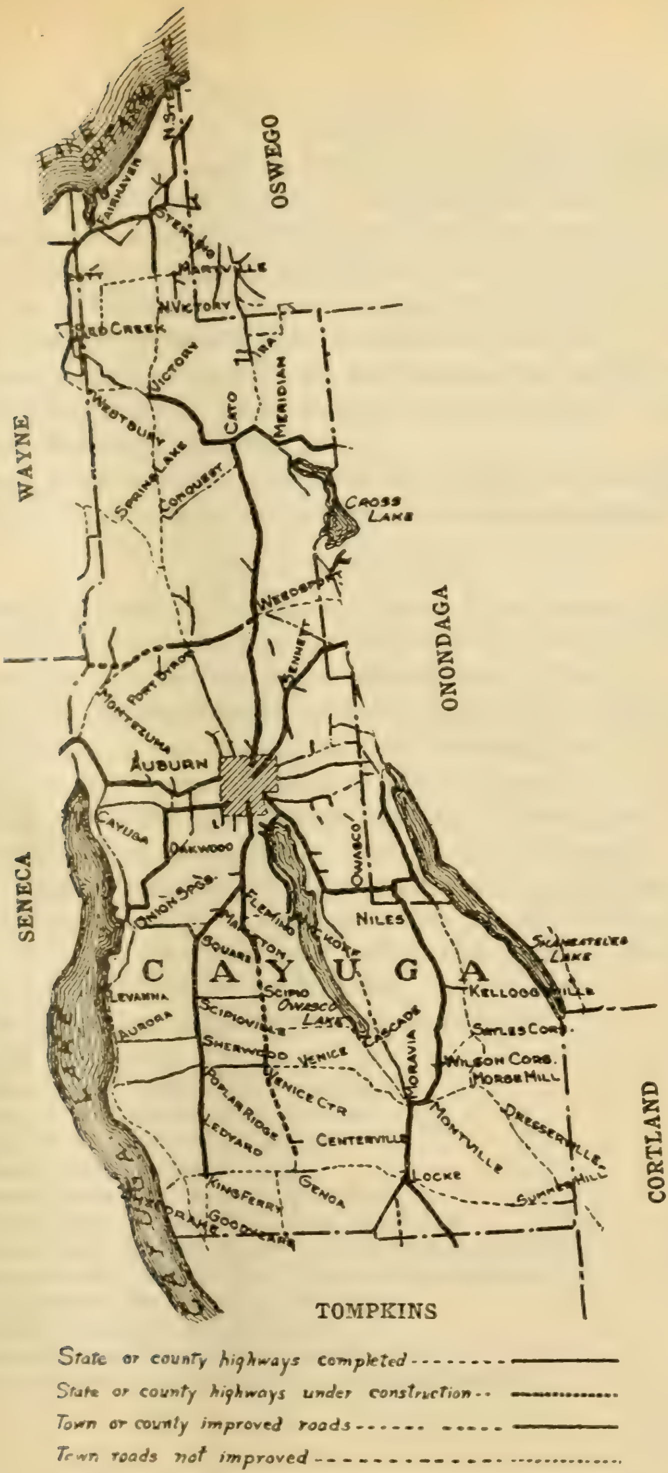
Four lines of the New York Central Railroad cross Cayuga County from east to west. Through the northern part runs a line between Oswego and Niagara Falls; through the center runs the Auburn branch and between these passes the main line and the West Shore line.

The Lehigh Valley Railroad extends the entire length of the county from north to south, terminating at North Fair Haven on Lake Ontario and extending through Auburn to points in Pennsylvania. Another line of this road extends along the east shore of Cayuga Lake to Cayuga Junction, then turning east to Auburn. A branch continues along the lake shore to Cayuga. The Central New York Southern Railroad runs between Auburn and Ithaca.

Electric Roads and Waterways

An electric road running between Syracuse and Rochester crosses the towns of Brutus, Mentz, and Montezuma. From Port Byron in the town of Mentz a branch runs south to Auburn. From this city the Auburn and Syracuse Electric Railroad extends to Syracuse.

The northern part of the county is crossed by the Barge Canal.


LAKE ONTARIO
N. STERLING
OSWEGO
FAIRHAVEN
STERLING
MARTVILLE
POTT
N. VICTORY
RED CREEK
VICTORY
IRA
CATO
MERIDIAN
WAYNE
WESTBURY
SPRING LAKE
CONQUEST
CROSS LAKE
WEEDSPORT
ONONDAGA
BENNETT
PORT BYRON
MONTEZUMA
AUBURN
CAYUGA
OAKWOOD
OWASCO
UNION SPGS.
FLEMING
SENECA
NILES
HAMILTON
SQUARE
SKANEATELES LAKE
C A Y U G A
SCIPIO
OWASCO LAKE
KELLOGGSVILLE
LEVANNA
SCIPIOVILLE
AURORA
CASCADE
SAYLES CORS.
SHERWOOD
VENICE
MORAVIA
WILSON CORS.
MORSE HILL
POPLAR RIDGE
VENICE CTR
LEDYARD
CENTERVILLE
MONTVILLE
DRESSERVILLE
CORTLAND
KINGS FERRY
GENOA
LOCKE
SUMMER HILL
GOODYEARS
CAYUGA LAKE
TOMPKINS
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Improved Highways

With the exception of an improved highway that crosses the northern part of the county to Oswego, all the improved highways of Cayuga County lead directly or indirectly into Auburn. One of these is the highway leading directly across the state and connecting Auburn on one side with Syracuse and on the other with Rochester and Buffalo. A second leads north to Victory, branching at Cato on the east and at Weedsport on the west; a third leads south and connects with the road crossing the southern part of the state; a fourth leads south to King Ferry; and a fifth leads southwest to Union Springs.

There are in the county 110 miles of completed improved highways with twenty-eight miles additional under construction.

AVAILABLE MARKETS

Since it is favorably located on railroads in the central part of the county, Auburn furnishes an excellent local market. Among the well-known manufacturing establishments in this city is a branch of the International Harvester Company, also the Columbia Rope Company, two large shoe manufacturing plants, and a button factory. A state prison is located at Auburn.

Other markets for farm produce, especially for small fruits and vegetables, are Syracuse, Fulton, Oswego, and Rochester.

More than one-half of the milk collected in Cayuga County is sold as market milk. About 1,200,000 pounds of American cheese is made; also some fancy and foreign types of cheese. There are also two canning factories.

The agricultural organizations are as follows:

Auburn Fur Breeders' Association.
Cayuga County Agricultural Corporation.
Cayuga County Beekeepers' Association.
Cayuga County Breeders' Association.
Cayuga County Dairymen's League.
Cayuga County Farm Bureau Association.
Cayuga County National Farm Loan Association.
Cayuga County Poultry, Pigeon and Pet Stock Association.
Cayuga County Sheep Breeders' Cooperative Association, Inc.
Cayuga County Threshermen's Association.
Conquest Cooperative Association, Inc.
Fleming Farmers' Cooperative Association, Inc.
Granges: Pomona and twenty-five subordinate granges.

Ira Community Cooperative Association, Inc.
Northern Cayuga Potato Association.
Owasco Valley Poultry Association.
Patrons' Cooperative Association of Cayuga County, Inc.
Scipio Patrons' Supply Company.
Southern Cayuga Drainage Association.
Southern Cayuga Potato Growers' Association.
Wayne National Farm Loan Association.

EDUCATIONAL FACILITIES

Wells College is located at Aurora, and the Auburn Theological Seminary at Auburn. Approved courses of agriculture are given at King Ferry, Moravia, and Weedsport. A course in home making is also given at King Ferry.

Schools in the county affording suitable facilities for maintaining approved courses in high school and academic work are located at Auburn, Cato, Fair Haven, Genoa, King Ferry, Locke, Meridian, Moravia, Port Byron, Union Springs, and Weedsport.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	411, 170 acres
Number of farms	4, 785
Per cent of farm land improved	82.1

LIVE STOCK PRODUCTS

Milk sold	6, 104, 870 gal.
Cream sold	14, 057 gal.
Butter fat sold	1, 882, 082 lbs.
Butter produced	347, 745 lbs.
Cheese produced	7, 286 lbs.
Eggs produced	2, 305, 131 doz.
Wool produced	12, 107 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	15, 540
Cattle	43, 919
Sheep	20, 958
Swine	22, 535
Poultry	360, 543

BEES

Number of colonies	4, 789

SELECTED CROPS

	Acres	Quantity
Cereals:		
Corn	23,491	850,149 bu.
Oats	38,920	1,210,652 bu.
Wheat	16,388	364,018 bu.
Barley	10,691	300,512 bu.
Buckwheat	14,420	388,598 bu.
Rye	585	11,326 bu.
Hay and forage	101,595	151,721 tons
Special crops:		
Potatoes	8,089	1,037,829 bu.
Vegetables, other than potatoes	3,238	....
Dry edible beans	179	3,493 bu.
Dry peas	45	1,091 bu.
Fruits:		
Apples	252,458 trees	484,341 bu.
Peaches and nectarines	29,560 trees	13,149 bu.
Pears	36,687 trees	23,088 bu.
Plums and prunes	14,913 trees	6,708 bu.
Cherries	14,390 trees	5,558 bu.
Quinces	1,829 trees	507 bu.
Grapes	56,113 vines	661,826 lbs.
Small fruits	173 acres	243,117 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,466	4,411

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	14,440	13,381
Cattle	36,499	32,756
Sheep	21,015	10,063
Swine	13,763	12,617
Poultry	305,627	267,571

BEES

	1917 Number	1918 Number
Number of colonies	4,545	4,167

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	14,721	14,832	325,116 bu.
Oats	24,520	30,672	933,362 bu.
Barley	11,286	11,467	263,668 bu.
Buckwheat	14,432	10,310	237,503 bu.
Wheat (winter)	20,964	21,685	507,631 bu.
Wheat (spring)	398	364	3,058 bu.
Rye	755	572	10,896 bu.
Hay and forage:			
Alfalfa	13,090	11,532	24,502 tons
Other hay	87,029	83,632	103,583 tons
Corn (ensilage)	8,428	8,448	51,924 tons
Corn (fodder)	....	2,474	....
Special crops:			
Field beans	2,948	2,833	19,365 bu.
Cabbage	1,033	2,125	10,790 tons
Potatoes	5,692	6,175	559,962 bu.
Roots raised for stock food	......	549	....
Canning factory crops	821	1,013	....
Other vegetables and garden crops	1,069	1,011	....
Fruits:			
Apples	7,442	8,820	144,354 bu.
Peaches	180	174	1,507 bu.
Pears	457	497	17,619 bu.
Plums	81	132	11,227 lbs.
Cherries	82	71	4,245 lbs.
Quinces	....	25	126 bu.
Vineyard	113	113	61,789 lbs.
Small fruits	286	270	....

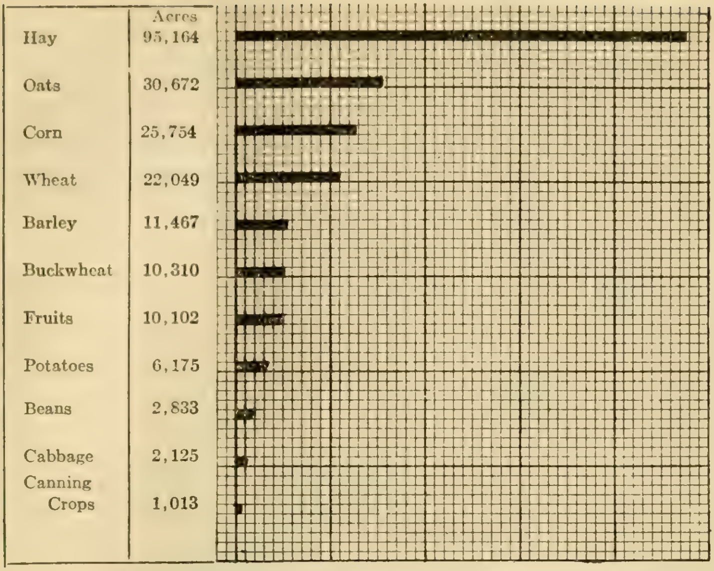


FIG. 40. CHART SHOWING RELATIVE ACREAGE OF CROPS IN CAYUGA COUNTY

CHAUTAUQUA COUNTY

This county lies in the southeastern part of the state, the state of Pennsylvania bordering it on the south and west and Lake Erie lying on the north. It has an area of 684,160 acres; from north to south it extends approximately 37 miles, and from east to west 32 miles. The population is shown in the following table:

Population by Cities and Towns

(Census of 1915)

Dunkirk (city)	17,870	Harmony	3,072
Jamestown (city)	37,780	Kiantone	641
Arkwright	843	Mina	1,021
Busti	2,351	Poland	1,442
Carroll	1,714	Pomfret	7,535
Charlotte	1,308	Portland	3,352
*Chautauqua	3,933	Ripley	2,482
Cherry Creek	1,630	Sheridan	2,077
Clymer	1,341	Sherman	1,732
Ellery	1,876	Stockton	1,830
Ellicott	5,216	Villenova	1,148
Ellington	1,317	Westfield	4,707
French Creek	941		
Gerry	1,194	Total	116,818
Hanover	6,465		

* Mayville, in the town of Chautauqua, is the county seat.

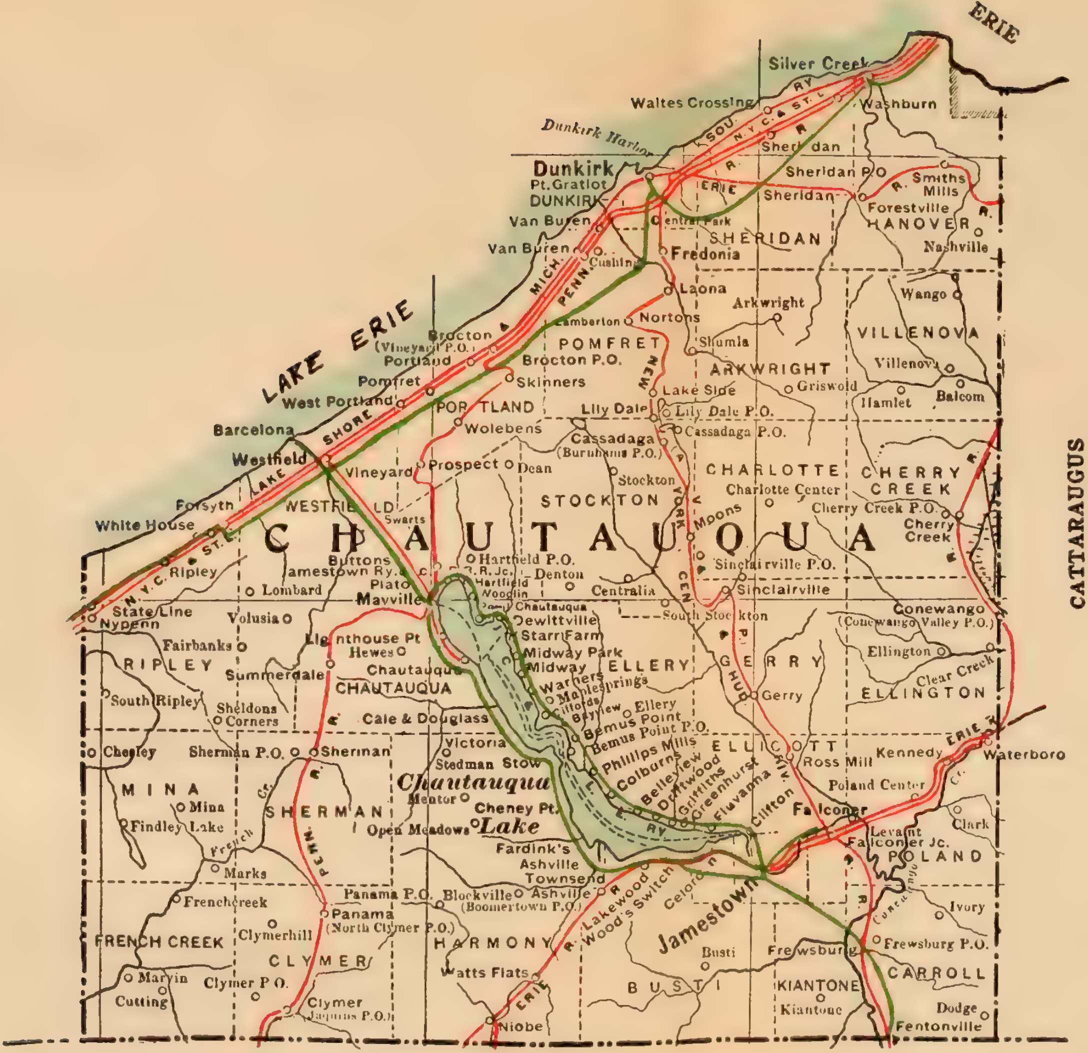
HISTORICAL ASSOCIATIONS

Chautauqua County was formed from Genesee in 1808. Its name is from the Seneca word meaning "one has taken out fish there." It is probable that the first white man to reach this part of the country was Stephen Brulé, the interpreter for Champlain, who visited this section in 1615. Not many Indian settlements were then located within the present county limits. After the Revolution, however, it became the home of the Senecas, who were under the control of the very able and just war chief, Cornplanter. It has been said that this famous chief "belonged to the region as did Robin Hood to Sherwood Forest."

In 1802 General Paine, agent for the state of Connecticut, opened a wagon road from Buffalo to Chautauqua Creek to enable

---

Note: Dunkirk has at present a population of 19,300, and Jamestown, 38,900.


ERIE
Silver Creek
Washburn
Waltes Crossing
Dunkirk Harbor
Dunkirk
Pt. Gratiot
DUNKIRK
Sheridan
Sheridan P.O.
Sheridan
Smiths Mills
Forestville
HANOVER
Nashville
Van Buren
Van Buren
Central Park
SHERIDAN
Fredonia
Cushing
Laona
Arkwright
Wango
LAKE ERIE
Brocton
(Vineyard P.O.)
Portland
Lamberton
Nortons
POMFRET
Brocton P.O.
Shumla
VILLENOVA
Villenova
Pomfret
Skinners
ARKWRIGHT
Lake Side
Griswold
Hamlet
Balcom
West Portland
PORTLAND
Lily Dale
Lily Dale P.O.
Barcelona
Wolebens
Cassadaga
(Burnhams P.O.)
Cassadaga P.O.
Westfield
Vineyard
Prospect
Dean
Stockton
CHARLOTTE
CHERRY CREEK
Charlotte Center
Cherry Creek P.O.
Cherry Creek
Forsyth
WESTFIELD
Swarts
STOCKTON
Moons
White House
CHAUTAUQUA
CATTARAUGUS
Buttons
Jamestown Ry.
Hartfield P.O.
Denton
Sinclairville P.O.
Ripley
Plato
Hartfield
Woodlin
Lombard
Centralia
Sinclairville
Mayville
State Line
Nypenn
Volusia
Chautauqua
Dewittville
South Stockton
Conewango
(Conewango Valley P.O.)
Fairbanks
Lighthouse Pt
Starr Farm
Hewes
Midway Park
Midway
ELLERY
GERRY
Ellington
RIPLEY
Summerdale
Chautauqua
Warners
Maplesprings
Clear Creek
CHAUTAUQUA
Gifford
Bayview
Ellery
Gerry
ELLINGTON
South Ripley
Sheldons Corners
Cale & Douglass
Bemus Point
Bemus Point P.O.
Chesley
Sherman P.O.
Sherman
Victoria
Phillips Mills
ELLICOTT
Kennedy
Waterboro
Ross Mill
Stedman
Stow
Colburn
Belleview
Driftwood
Griffiths
Greenhurst
Fluvanna
Poland Center
MINA
Mina
SHERMAN
Chautauqua Lake
Mentor
Cheney Pt.
Celoron
Falconer
Findley Lake
Open Meadows
Clifton
Clark
Levant
Falconer Jc.
POLAND
Fardink's
Ashville
Townsend
Marks
Frenchcreek
Panama P.O.
Blockville
(Boomertown P.O.)
Ashville
Panama
(North Clymer P.O.)
Lakewood
Wood's Switch
Jamestown
Ivory
FRENCH CREEK
Clymerhill
HARMONY
Busti
Frewsburg
Frewsburg P.O.
CLYMER
Watts Flats
BUSTI
KIANTONE
CARROLL
Marvin
Clymer P.O.
Cutting
Clymer
(Jaquins P.O.)
Niobe
Kiantone
Dodge
Fentonville
PENNSYLVANIA
N.Y.C. & ST. L. R.R.
SOU. RY
ERIE R.R.
MICH.
PENN.
NEW YORK CEN.
PENN.
LAKE SHORE
C. L. E. RY

Map of Chautauqua County, Showing Townships

Red, railroads; green, electric roads

emigrants to reach the Connecticut reserve lands in Ohio. Transportation facilities generally were poor for a long time, and products would hardly pay for the cost of marketing. Development did not progress rapidly until some years later, after railroads had been built.

Chautauqua is noted for the Chautauqua Assembly, which has been held there for many years, and from which all Chautauqua circles originated.

DEVELOPMENT OF INDUSTRY

Most of the business of the county was carried on for many years in the northern or lake towns, which were first settled and possessed superior commercial advantages. Maple sugar, long an important product, was brought in large quantities from the southern towns. Ashes constituted the most important article of trade, being almost the only one that could readily be turned into cash. Corn, wheat, and pork were among the principal products. Until about forty or fifty years ago general farming was followed throughout the greater part of the county. Since that time the Lake Erie valley has become a highly intensive fruit and vegetable section. This region has come to be known as the Chautauqua grape belt. The belt extends north into Erie County, New York, and south into Erie County, Pennsylvania, but the grape industry is centered mainly in Chautauqua, the county taking the lead in grape production through the state. Small fruits are extensively raised. The nursery business, especially the growing of grape and small-fruit stocks, has grown to large proportions in the vicinity of Fredonia and Silver Creek. In other sections dairy farming takes the lead. There are also extensive poultry interests, Chautauqua ranking second in the state. Apples, potatoes, wheat, buckwheat, and other cash crops are produced, the county ranking third in the amount of buckwheat raised. It is an excellent hay country and is also noted for maple products. In the towns of Kiantone, Poland, and Ellicott considerable quantities of garden crops are produced for the Jamestown markets.

CLIMATE AND RAINFALL

The climatological records here given for Chautauqua County were taken at Volusia at an elevation of 1,560 feet by the present observer, Benjamin Breads.

Average dates for the last killing frost in spring and the first in fall are May 8 and October 10, giving a growing season of 155 days.

The following table, compiled from records covering the period 1899 to 1915, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT VOLUSIA

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	23.4	68	1906	—13	1904	3.19	1.47	1900	20.3
February	19.0	64	1906	—18	1912	2.46	0.93	1909	14.9
March	32.1	80	1910	—6	1901	2.73	2.45	1913	9.5
April	42.8	80	1913*	8	1909	2.86	2.53	1901	5.5
May	56.0	91	1911	26	1911*	3.38	2.10	1914	1.7
June	63.7	92	1910	36	1913*	3.12	1.64	1905	......
July	68.6	98	1911	43	1904	3.44	2.09	1900	......
August	66.6	92	1914	41	1910	3.24	2.35	1905	......
September	61.4	91	1900	30	1904	3.73	3.36	1901	T.
October	50.6	85	1900	23	1911*	3.91	2.37	1912	2.3
November	37.7	74	1909	7	1905	3.51	1.61	1900	13.4
December	26.8	62	1914	—7	1914	2.93	1.20	1900	19.8
Year	45.7	98	1911	—18	1912	38.50	3.36	1901	87.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is mostly a hilly and rolling upland. A bluff with an average elevation of twenty feet extends along the lake. From the summit the land spreads out into an undulating region gradually rising throughout a distance of three or four miles. This comparatively level tract is bordered by the slopes of a hilly upland which occupies the center and southern parts of the county. The highest summits rise 1,200 to 1,400 feet above Lake Erie, and 1,800 to 2,000 feet above tide. The uplands are broken by several deep valleys, the principal of which are those of Chautauqua Lake and Conewango Creek. The summits of the hills four to six miles south of the lake shore form the watershed that divides the waters of Lake Erie from those of the Allegheny River.

The streams of the county are principally tributaries of Lake Erie and Allegheny River. Chautauqua Lake is a beautiful sheet of water eighteen miles long and one to three miles wide. It lies 1,306 feet above tide, the hills surrounding it rising from 600 to 800 feet above its surface. Its outlet forms a branch of Conewango Creek, which is a tributary to the Allegheny. Several small lakes are located among the highlands.

The soil on the uplands is principally silt mixed with disintegrated shale. In the valleys it is a fine quality of sandy and gravelly loam mixed with alluvium. Along the lake shore is a strip of productive clayey loam. The uplands are arable to their summits, but are often better adapted to pasturage than to tillage.

DESCRIPTION BY TOWNSHIPS

ARKWRIGHT: The surface is an elevated upland broken and hilly in the southwest and rolling in the northeast. The highest summit, southeast of the center, rises 1,900 feet above sea level. The soil is silt and gravelly loam.

Products: In the north and west, grapes, tomatoes, and small fruits; and in the east and south, dairy products.

Average values of farm land range from $15 to $100 an acre.

BUSTI: The surface is hilly and broken. It is drained by several small streams flowing into Chautauqua Lake on the north and by others flowing east into Conewango Creek. The soil is silt and gravelly loam.

Products: Dairy products, apples, and potatoes.

Average values of farm land range from $20 to $50 an acre, except in the vicinity of Chautauqua Lake and Jamestown, where it is much higher.

CARROLL: The surface is broken and hilly in the northeast and east, and rolling in the south and southwest. The highest summits are 2,000 feet above tide. The principal stream is Conewango Creek, which forms part of the western boundary. The soil is a silty loam in the north and east and a gravelly loam in the south and west. At Frewsburg is located a milk powder plant owned by the Merrell-Soule Company.

Products: Dairy products, with a few apples.

Average values of farm range from $20 to $50 an acre.

CHARLOTTE: The surface is moderately hilly and divided into several ridges by the valleys of streams, the principal of which are Mill Creek and its tributaries. The highest land on the east side rises 1,800 to 2,000 feet above sea level. The soil is chiefly a silty loam. The principal market for milk in this town is Borden's Condensary at Sinclairville.

Products: Dairy products.

Average values of farm land range from $20 to $60 an acre.

CHAUTAUQUA: The surface is elevated and moderately hilly, occupying the watershed between Chautauqua Lake and Lake Erie. The soil is a silty loam of good quality, including much of the better grade of soils in the area adjacent to Chautauqua Lake. Mayville, the county seat, lies within the limits of this town.

Products: Dairy products.

Average values of farm land range from $20 to $50, except near Chautauqua Lake, where values are much higher.

CHERRY CREEK: The surface is hilly in the northwest and rolling in the southeast. In the western part the highest points rise to a height of 2,100 feet. Along the eastern border is a large swamp that lies partly in Cattaraugus County. The town is drained by Conewango Creek and its tributary. The soil is a clayey and gravelly loam. Most of the milk is shipped to Buffalo, some of it going to Hire's Condensary at South Dayton and to the few cheese factories in the town. At Cherry Creek is located a canning factory.

Products: Dairy products, apples, canning factory peas, and muck land crops.

Average values of farm land range from $15 to $100 an acre.

CLYMER: The surface is a hilly upland broken by the valleys of small streams. The soil is a gravelly loam. The Mohawk Condensary at Clymer is the chief outlet for dairy products. This town has good shipping facilities over the Pennsylvania Railroad.

Products: Dairy and poultry products.

The average values of farm land range from $20 to $50 an acre.

ELLERY: The surface is hilly, the highest summits rising about 1,800 feet above tide. The small streams which form the principal drainage of the town flow into Chautauqua Lake on the southwest boundary. The soil in the uplands is a silty loam, and in the valleys a gravelly loam. On the hilltops remote from the lake, which are poorly drained, dairying is the principal industry. Near the lake agricultural interests are well developed, wheat being grown considerably along the lake road.

Products: Dairy products, apples, potatoes, and wheat.

Average values of farm land range from $15 to $100 an acre.

ELLICOTT: The surface is a hilly upland with a gentle inclination toward the southwest. The foot of Chautauqua Lake extends into the southwest corner, and the outlet flows through the southern part of the town. Cassadaga Creek flows through the northeastern part. The soil is a sandy and gravelly loam. Near Celoron are muck lands valuable for celery, lettuce, and onions, which are so near the level of Chautauqua Lake that they have not been well developed. There is, however, a considerable amount of gardening done within the town.

Products: Dairy and garden products.

Average values of farm land range from $50 to $100 an acre.

ELLINGTON: The surface is an undulating and hilly upland rising from 1,500 to 1,800 feet above tide. Clear Creek and its tributary form the principal drainage. Conewango Creek flows through the northeast corner. The soil is a sandy and gravelly loam. The town has well-developed dairy interests and ships considerable milk to Buffalo. Sheep are more commonly kept than in other parts of the county.

Products: Dairy products, sheep, potatoes, wheat, and canning factory crops.

Average values of farm land range from $20 to $50 an acre.

FRENCH CREEK: The surface is hilly and broken by the deep valley of French Creek. The soil is chiefly a heavy silty loam. Shipping facilities are not so readily available in this town as in most other parts of the county.

Products: Dairy products, poultry, and potatoes.

Average values of farm land range from $15 to $40 an acre.

GERRY: The surface is a hilly upland, the highest summits in the northeast corner being 1,900 feet above tide. It is drained by Cassadaga Creek and several smaller streams. The soil is a silty loam on the uplands and a sandy loam in the valleys. The Borden's Condensary at Sinclairville is the milk market of the town.

Products: Dairy products and hay.

Average values of farm land range from $20 to $50 an acre.

HANOVER: The surface along the lake is level or undulating, and in the center and south it is hilly, with an inclination toward the north. Cattaraugus Creek forms a portion of the northern boundary. Silver Creek and its tributary flow into Lake Erie. The soil is a clayey and gravelly loam.

Products: Grapes, tomatoes, peas, and sweet corn for canning factories; cherries, strawberries, red raspberries, potatoes, grain, hay, and butter.

Average values of farm land range from $50 to $500 an acre.

HARMONY: The surface is a moderately hilly upland, the highest summits being about 1,800 feet above tide. Chautauqua Lake forms the northeastern boundary. In the northern part the streams flow into Chautauqua Lake, and in the southern part is Little Brocken Straw, which flows south into Pennsylvania. The soil is silt and gravelly loam. Although this is chiefly a dairy township it has more of the cash crops interests than the average of the southern part of Chautauqua County.

Products: Dairy products, apples, potatoes, and wheat.

Average values of farm land range from $20 to $50, except near Chautauqua Lake, where the values are much higher.

KIANTONE: The surface is undulating in the east and hilly in the west. Conewango Creek forms the greater part of the eastern boundary. Kiantone and Stillwater creeks are the other principal streams. The soil is silty loam mixed with gravel. Although the town is devoted to dairying there is considerable business in market gardening. There are several fair-sized orchards.

Products: Dairying, truck crops, including cabbage, squash, sweet corn, potatoes, and apples.

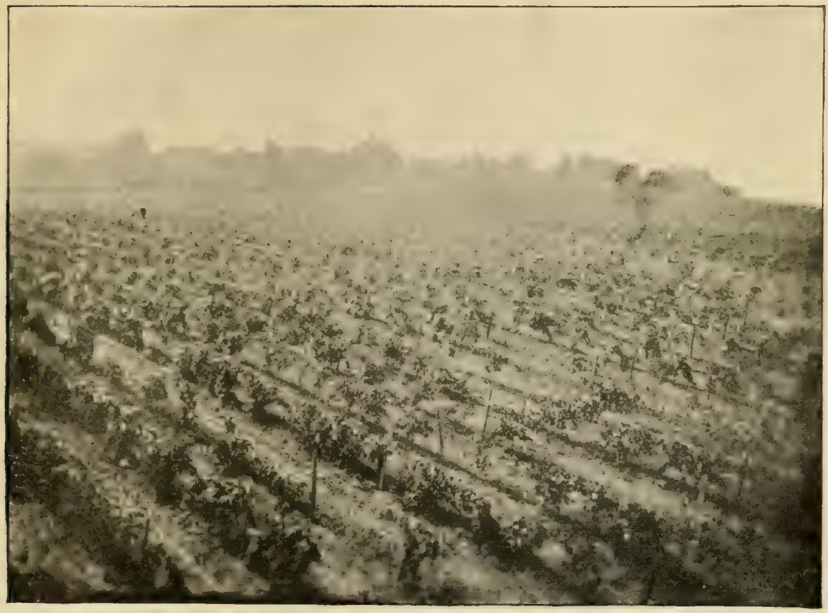


Fig. 41.—Vineyards near Silver Creek, on Ridge Road, Chautauqua County

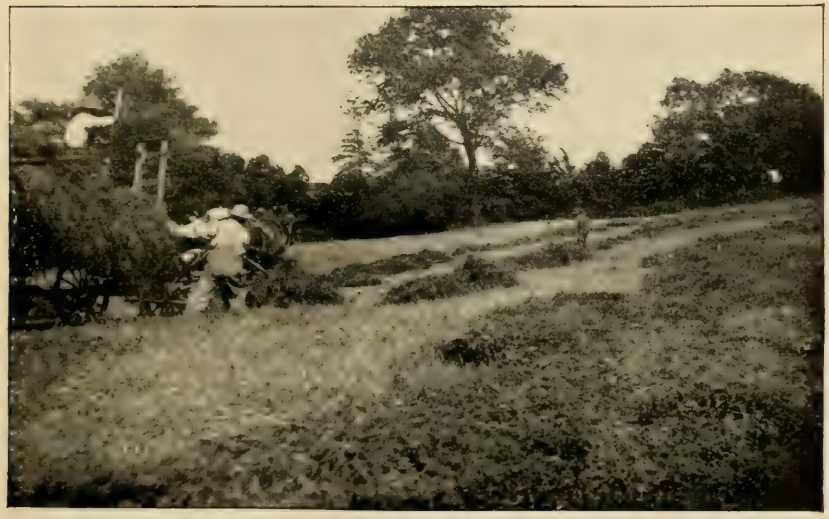


Fig. 42.—Haying Alfalfa in Chautauqua County

Average values of farm land range from $20 to $50 an acre, except in the vicinity of Jamestown where values are much higher.

MINA: The surface is rolling and hilly. The principal streams are French Creek and several small creeks flowing south and west. Findley Lake lies in the southwestern part. The soil is silt and gravelly loam. This town is devoted almost entirely to dairy farm interests. The milk is sold chiefly to the Mohawk Condensing Company at Sherman and Clymer. Findley Lake is the trading center for the town.

Products: Dairy products.

Average values of farm land range from $20 to $50 an acre.

POLAND: In the north and east the surface is a hilly upland, divided into several distinct ridges. The center and south contain the wide valleys of the principal streams, Conewango and Cassadaga creeks, which form a junction near the southern line. The soil is silt and sandy loam. Near Levant is a section of well-drained soils where a considerable quantity of vegetables and fruit are grown for the Jamestown market. Milk is sent to Frewsburg and Randolph, as well as to Buffalo.

Products: Dairy products, vegetables, and fruit.

Average values of farm land range from $20 to $100 an acre.

POMFRET: A strip of comparatively level land extends along the lake. The remainder of the surface is a rolling upland, and the higher summits have an elevation of 1,500 feet. It is drained principally by Canadaway Creek and several smaller streams flowing into the lake. The soil is a clayey and gravelly loam.

Products: Grapes, tomatoes, and sweet corn for cannery; small fruits, also grain, hay, and dairy products.

Average values of farm land range from $50 to $500 an acre.

PORTLAND: The surface is level along the lake shore and broken and hilly in the center and west. The streams are small creeks and brooks flowing into Lake Erie. The soil is a clayey and gravelly loam. This town has one of the largest grape acreages.

Products: Grapes, tomatoes, and small fruits.

Average values of farm land range from $50 to $500 an acre.

RIPLEY: The surface is level along the lake shore and broken and hilly in the southeast. The highest summits rise to a height of over 1,600 feet. It is drained by Twentymile Creek and its tributary, besides a great number of small streams. The soil is a clayey and gravelly loam. Along the lake shore are several valuable stone quarries. While fruits are the main products of the town, dairying and general farming are carried on in the southern part.

Products: Grapes and small fruits, including currants and cherries; also dairy products.

Average values of farm land range from $20 to $500 an acre.

SHERIDAN: The surface is level in the northwest and hilly in the southeast, gradually descending toward the lake. A nearly perpendicular bluff 50 to 200 feet high extends along the lake shore. It is drained by Scotts Creek and several smaller streams. The soil is a silty loam occasionally intermixed with gravel.

Products: Grapes, tomatoes for cannery; small fruits, grain; also peas for cannery and general truck crops of onions, beets, lettuce, and cabbage.

Average values of farm land range from $50 to $500 an acre.

SHERMAN: The surface is rolling and hilly, broken by the deep ravines of the streams. It is drained by French Creek and its tributaries. The soil is silt and sandy loam. This town has the reputation as a center where excellent Holstein cows may be purchased, and many carloads are shipped from here each year. The village of Sherman is the trading center.

Products: Dairy and poultry products.

Average values of farm land range from $20 to $75 an acre.

STOCKTON: The surface is a rolling and hilly upland. Cassadaga and Bear creeks rise in the northern part of the town and flow south, uniting near the southern border. The soil on the upland is a silty loam and in the valleys a sandy loam. The milk is marketed principally at the condensary in Sinclairville, although there are a few cheese factories operating in the town.

Products: Dairy products, potatoes, and apples.

Average values of farm land range from $15 to $60 an acre.

VILLENOVA: The surface is rolling in the southeast and broken and hilly in the center and north. The highest summits are 1,700 feet above sea level. Conewango Creek and its branches are the principal streams. The soil is silt and gravelly loam. This town has a comparatively large percentage of the better valley soils. Potatoes are generally sold in the Dunkirk markets. .

Products: Dairy products and potatoes.

Average values of farm land range from $20 to $75 an acre.

WESTFIELD: The surface is level or rolling along Lake Erie and hilly in the center and south. It is drained by Chautauqua and Little Chautauqua creeks and several smaller streams. The soil is a clayey and gravelly loam. Some apple, peach, and cherry orchards are being developed.

Products: Grapes, tomatoes, and small fruits.

Average values of farm land range from $50 to $500 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

A line of the Erie Railroad from Buffalo and another from New York enter the city of Jamestown, from which point a line runs southwest into Pennsylvania. From Dunkirk an Erie line runs east, connecting with the Buffalo line at Dayton in Cattaraugus County.

The New York Central Railroad extends through the county along Lake Erie, running to Buffalo on the north and west to points along the lake. A branch extends from Dunkirk south into Pennsylvania.

The Pennsylvania Railroad extends from Dunkirk through Mayville and south into Pennsylvania.

Electric Roads

An electric road runs from Jamestown along the east shore of Chautauqua Lake to Westfield.

An electric road runs the entire length of the county near the shore of Lake Erie, extending to Buffalo on the north and to Erie, Pennsylvania, on the west.

The Chautauqua Traction Company line leads from Barcelona through Westfield to Mayville and down the west side of Chautauqua Lake to Jamestown and Falconer.

A third electric line runs between Jamestown and Fentonville.

Improved Highways

Chautauqua County is crossed by an improved highway entering the eastern side of the county and passing through Jamestown and along the northern side of Chautauqua Lake through Mayville to Westfield. Short sections also enter Jamestown from the north and from the south.

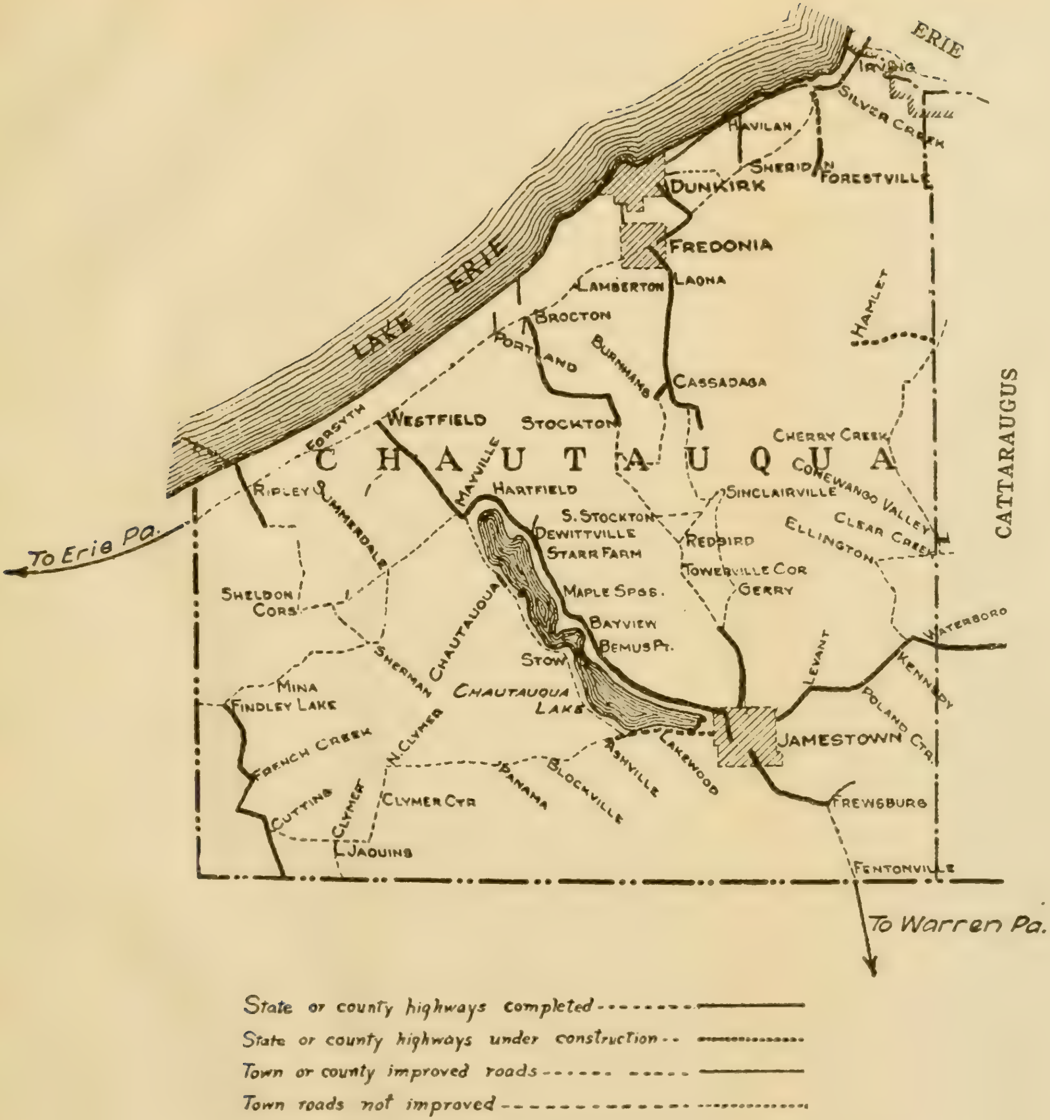
An improved highway leads from Dunkirk through Fredonia south into the town of Stockton.

Additional short sections extend between Brocton and Stockton, through Ripley, and from Findley Lake through the southwestern part of the county.

There are within the county approximately 40 miles of completed improved highways, 24 miles additional being under construction.

AVAILABLE MARKETS

A ready market for some of the agricultural products exists in the manufacturing cities of Jamestown and Dunkirk. For many weeks in the summer season splendid markets for farm products are afforded in the resorts along Chautauqua Lake, and especially at the Chautauqua Assembly, which is usually visited by 20,000 to 30,000 people during the season. The grape crop of Chautauqua County is shipped to practically all the northern and middle western states, while grape juice, canned fruits, and vegetable products and the condensed milk output have an even wider dis-


ERIE
IRVING
SILVER CREEK
HAVILAH
SHERIDAN
FORESTVILLE
DUNKIRK
FREDONIA
LAKE ERIE
LAMBERTON
LAONA
BROCTON
PORTLAND
BURNHAMS
CASSADAGA
HAMLET
WESTFIELD
STOCKTON
FORSYTH
CHERRY CREEK
CATTARAUGUS
CHAUTAUQUA
CONEWANGO VALLEY
RIPLEY
SUMMERDALE
MAYVILLE
HARTFIELD
SINCLAIRVILLE
S. STOCKTON
DEWITTVILLE
STARR FARM
REDBIRD
CLEAR CREEK
ELLINGTON
To Erie Pa.
SHELDON CORS.
TOWERVILLE COR
GERRY
MAPLE SPGS.
BAYVIEW
BEMUS PT.
WATERBORO
SHERMAN
CHAUTAUQUA
STOW
KENNEDY
MINA
FINDLEY LAKE
CHAUTAUQUA LAKE
LEVANT
POLAND CTR.
FRENCH CREEK
N. CLYMER
JAMESTOWN
ASHVILLE
LAKEWOOD
PANAMA
BLOCKVILLE
CUTTING
CLYMER
CLYMER CTR
FREWSBURG
JAQUINS
FENTONVILLE
To Warren Pa.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

tribution. The cheese manufactured in the county goes largely to New York and Philadelphia for consumption at those points or for further shipment.

The dairies in Chautauqua County are generally large. By far the greater portion of the milk produced is sold as manufactured products, principally in the form of condensed milk and powdered milk and cream. About 500,000 pounds of butter and some American cheese is made.

There are nine canning factories.

The agricultural organizations of the county are as follows:

Ashville National Farm Loan Association.
Carroll Farmers' Club.
Central National Farm Loan Association.
Chautauqua and Erie Grape Company.
Chautauqua County Agricultural Corporation.
Chautauqua County Beekeepers' Association.
Chautauqua County Cooperative Sheep Breeders' Association, Inc.
Chautauqua County Dairymen's League.
Chautauqua County Farm Bureau Association.
Chautauqua County Farmers Milk Producers' Association.
Chautauqua County Fruit Growers & Packers' Association.
Chautauqua County Poultry Association.
Chautauqua Lake Dairy Improvement Association.
Clymer Milk Producers' Association.
Farmers' Cooperative Purchasing Association.
First of Jamestown National Farm Loan Association.
Fredonia Grange Cooperative Association, Inc.
Granges: Pomona and thirty-four subordinate granges.
Hanover Farmers' Club.
Kiantone Cooperative Dairy Association, Inc.
Sherman Poultry Association.
Silver Creek Poultry Association.
Sinclairville Dairymen's Cooperative Association, Inc.
South Shore Growers' and Shippers' Association.

EDUCATIONAL FACILITIES

At Fredonia is located a state normal school. Approved courses of agriculture are given in schools at Chautauqua, Clymer, Ellington, Mayville, Sherman, Sinclairville, and Westfield. Courses in home making are included in the schools at Chautauqua, Mayville, and Sinclairville.

Schools at the following points are registered as having facilities suitable for maintaining courses in high school and academic work: Brocton, Cassadaga, Celoron, Chautauqua, Clymer, Dunkirk, Ellington, Falconer, Findley, Forestville, Frewsburg, Gerry, Jamestown, Lakewood, Mayville, Panama, Ripley, Sherman, Silver Creek, Sinclairville, Stockton, and Westfield.

Probably the most famous educational institution in Chautauqua County is the Chautauqua Assembly. Starting as a camp meeting in 1875, it has developed into a chartered institution for higher education. Complete summer schools are maintained and thousands are in attendance annually. The institution is philanthropic in character and is not conducted for profit.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	613, 000 acres
Number of farms	7, 500
Per cent of farm land improved	65.4

LIVE STOCK PRODUCTS

Milk sold	12, 747, 082 gal.
Cream sold	46, 115 gal.
Butter fat sold	2, 438, 844 lbs.
Butter produced	482, 765 lbs.
Cheese produced	5, 476 lbs.
Eggs produced	2, 268, 626 doz.
Wool produced	7, 740 fleeces

LIVE STOCK AND POULTRY

Horses	17, 363
Cattle	88, 202
Sheep	14, 294
Swine	20, 757
Poultry	325, 621

BEES

Number of colonies	3, 680

SELECTED CROPS

	Acres	Bushels
Cereals:		
Corn	14, 336	500, 858
Oats	28, 467	846, 513
Wheat	918	19, 379
Barley	1, 727	36, 392
Buckwheat	10, 652	257, 341
Rye	454	8, 841

	Acres	Tons
Hay and forage	119, 559	28, 907

Special Crops:	Acres	Yield
Potatoes	6, 329	778, 277 bu.
Vegetables, other than potatoes	4, 291	....
Dry edible beans	106	1, 885 bu.
Dry peas	45	681 bu.

Fruits:		
Apples	299, 329 trees	646, 269 bu.
Peaches and nectarines	32, 377 trees	15, 486 bu.
Pears	22, 110 trees	13, 633 bu.
Plums and prunes	15, 848 trees	9, 578 bu.
Cherries	24, 483 trees	12, 630 bu.
Quinces	2, 951 trees	2, 020 bu.
Grapes	15, 782, 646 vines	132, 029, 939 lbs.
Small fruits	993 acres	1, 644, 853 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	7, 050	6, 432

LIVE STOCK AND POULTRY

Horses and mules	16, 776	14, 633
Cattle	78, 334	67, 588
Sheep	7, 331	5, 212
Swine	9, 502	8, 336
Poultry	369, 454	296, 046

BEES

Number of colonies	3, 575	4, 157

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	6, 646	4, 727	54, 852 bu.
Oats	28, 884	26, 887	653, 741 bu.
Barley	1, 385	1, 131	13, 600 bu.
Buckwheat	8, 915	9, 958	164, 564 bu.
Wheat (winter)	1, 101	1, 324	18, 960 bu.
Wheat (spring)	372	1, 059	12, 235 bu.
Rye	224	423	5, 198 bu.

Hay and forage:			
Alfalfa	723	870	2, 312 tons
Other hay	92, 800	92, 711	151, 158 tons
Corn (ensilage)	10, 713	12, 435	62, 269 tons
Corn (fodder)	......	3, 997	......

	1917	1918	
	Acres	Acres	Yield
Special Crops:			
Field beans	646	1, 091	4, 776 bu.
Cabbage	342	514	1, 434 tons
Potatoes	5, 913	5, 887	479, 978 bu.
Roots raised for stock food	......	890	......
Canning factory crops	2, 508	1, 090	......
Other vegetables and garden crops	1, 474	3, 377	......
Fruits:			
Apples	7, 619	6, 832	33, 043 bu.
Peaches	438	373	2, 177 bu.
Pears	189	265	5, 176 bu.
Plums	237	373	69, 012 lbs.
Cherries	635	551	250, 419 lbs.
Quinces	......	24	1, 523 bu.
Vineyard	24, 215	22, 688	45, 496, 000 lbs.
Small fruits	1, 351	1, 498	......

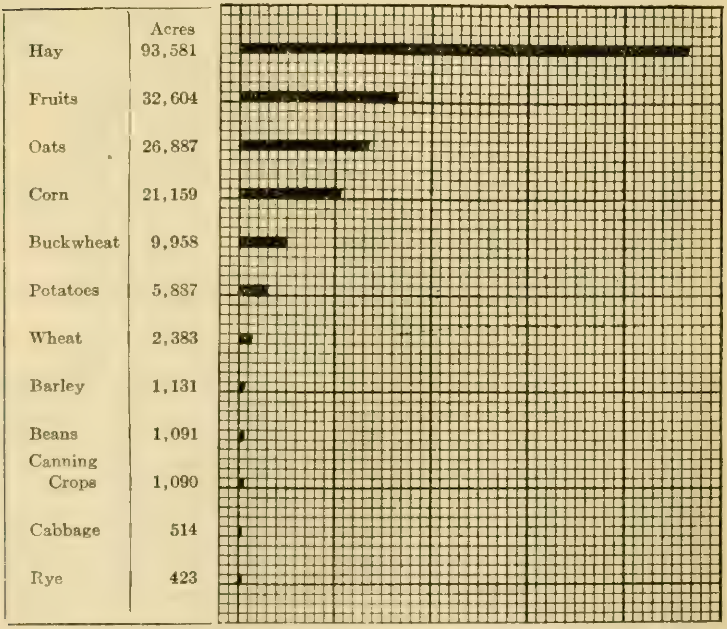
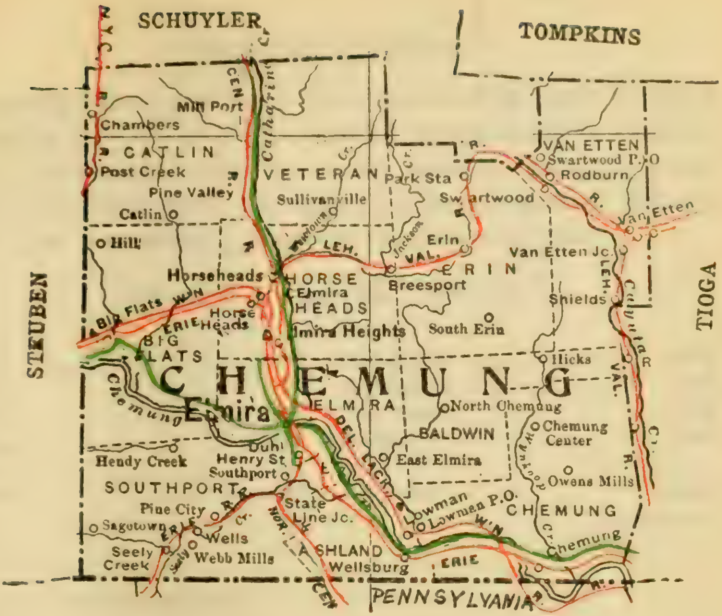
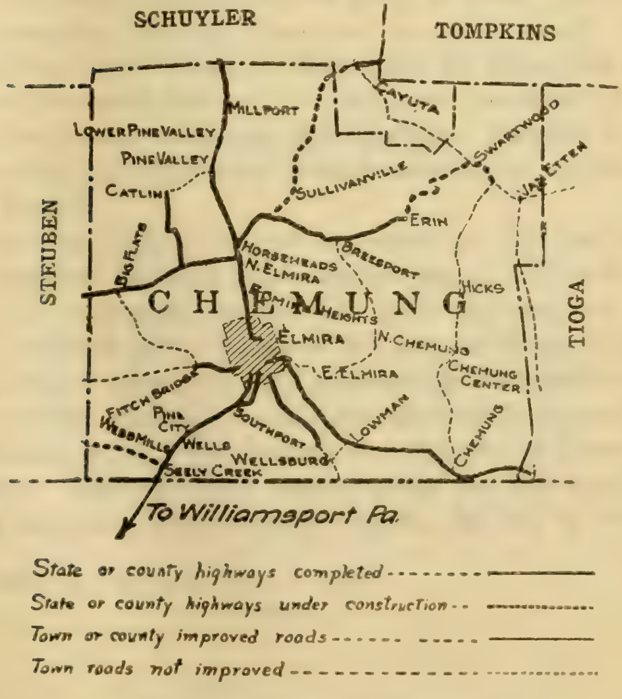


FIG. 43. CHART SHOWING RELATIVE ACREAGE OF CROPS IN CHAUTAUQUA COUNTY


SCHUYLER
TOMPKINS
STEUBEN
TIOGA
PENNSYLVANIA
Mill Port
Chambers
CATLIN
Post Creek
Pine Valley
Catlin
Hill
VETERAN
Sullivanville
Park Sta
Swartwood
VAN ETTEN
Swartwood P.O.
Rodburn
Van Etten
Van Etten Jc.
Erin
ERIN
Breesport
Shields
South Erin
Horseheads
HORSE HEADS
Elmira
Horse Heads
Elmira Heights
BIG FLATS
Big Flats
CHEMUNG
Elmira
ELMIRA
Hicks
North Chemung
BALDWIN
Chemung Center
East Elmira
Owens Mills
Chemung
Hendy Creek
Henry St
Southport
SOUTHPORT
Pine City
Sagetown
Wells
Seely Creek
Webb Mills
State Line Jc.
ASHLAND
Wellsburg
Lowman
Lowman P.O.
CHEMUNG
ERIE
LEH. VAL.
DEL. LACK. & W.
N.Y.C.
NOR. C.
CEN.
Catharine Cr.

Map of Chemung County, Showing Townships

Red, railroads; green, electric roads


SCHUYLER
TOMPKINS
STEUBEN
TIOGA
CHEMUNG
Millport
Lower Pine Valley
Pine Valley
Catlin
Cayuta
Swartwood
Van Etten
Sullivanville
Erin
Horseheads
N. Elmira
Breesport
Big Flats
Elmira Heights
Hicks
Elmira
N. Chemung
E. Elmira
Chemung Center
Fitch Bridge
Pine City
Webb Mills
Wells
Southport
Lowman
Chemung
Wellsburg
Seely Creek
To Williamsport Pa.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

CHEMUNG COUNTY

Chemung County is situated in the center of the southern tier of counties in New York, and is bounded on the south by Pennsylvania. From east to west the county measures about 20 miles, and from north to south, 20 miles. It has an area of 260,480 acres. The population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

*Elmira (city)	40,093	Horseheads	6,033
Ashland	828	Southport	2,320
Baldwin	539	Van Etten	1,116
Big Flats	1,495	Veteran	1,565
Catlin	834		
Chemung	1,383	Total	59,017
Elmira	1,971		
Erin	840		

* Elmira is the county seat.

HISTORICAL ASSOCIATIONS

Chemung County was formed from Tioga in 1836. The name is taken from the Chemung River, and is said to signify "big horn" or "horn in the water." Throughout the entire time that the red men occupied this part of the county the valley of the Chemung was one of their great thoroughfares. Previous to the Revolution the Indians probably learned something of agriculture from the French.

When General Sullivan invaded the region in 1779 he found Indian lands that had been cultivated for years. The orchards showed years of growth; the soil was well cultivated, and the variety of products gave evidence of the practice of agricultural knowledge far in advance of that possessed by the warrior race in other sections. The Senecas laid special claim to the country of the Chemung valley. The Indians were defeated at Newtown, now Elmira. They fled in a panic, leaving the way open for Sullivan's advance. This campaign marked the end of Indian

---

Note: Elmira now has a population of 45,000.

domination in the valley, although a few Indians remained there for many years. The battlefield, which lies in the towns of Elmira and Ashland, has been given to the state.

The first permanent settlement by white men was made in the spring of 1786 by eight men who came up the Susquehanna and Chemung rivers and located from Wynkoops Creek westward. Other settlers who had accompanied Sullivan on his expedition came from the New England states during the following year. Several families also migrated from southern New York, Pennsylvania, and New Jersey. The New York Legislature having passed laws favorable to settlers, newcomers arrived at a rapid rate during the next twenty years. This was largely due to reports concerning the fertile soil of the valley and the large yields to be obtained, often, history states, as much as fifty bushels of wheat per acre, with an average yield of twenty-five bushels. Other important products were maple sugar, fat cattle, and apples. Development followed rapidly, and in 1803 from 40,000 bushels to 50,000 bushels of wheat were annually sent down the Susquehanna to market. These shipments were entirely checked during the War of 1812, and a period of great business depression followed.

DEVELOPMENT OF INDUSTRY

About 1820 the lumber business became important, and it received great impetus on the completion of the Chemung Canal in 1832. The lumber was of such good quality that Chemung lumber commanded the highest market price in New York and Philadelphia.

The opening of the uplands to agriculture brought about the development of the live stock industry, and this has ever since been an important source of income in the county.

The completion of the Erie Railroad between New York and Buffalo in 1851 gave a second impetus to agriculture, and gradually brought about a change in the type of farming in Chemung County. The quick transportation facilities afforded by the railroads made it possible to market butter and cheese to advantage, and dairying soon became the leading branch of agriculture in the county.

During the past sixty years the most important changes have been as follows: The development of dairying, and the consequent decrease in the number of sheep kept and an increase in the acreage of meadows; the development of tobacco farming, which has received much attention along the Chemung flats; and, within the last few years, the rapid development of poultry raising, which promises to become an important source of income. Celery is also a prominent product.

Manufacturing interests, which include especially automobiles and machinery, are very important.

CLIMATE AND RAINFALL

The meterological station of Chemung County is at Elmira, at an elevation of 836 feet.

Average dates for the last killing frost in spring and the first in fall are May 6 and October 3, respectively, giving a growing season of 153 days.

The following table summarizes records made during a period of thirty-six years. The record, which has not been entirely continuous, covers the years 1850-61, 1888-1911, and 1912-15.

Record of Temperature and Precipitation at Elmira

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	25.7	67	1907	—24	1904	2.14	1.86	1915	7.9
February	26.1	65	1906	—19	1899	1.72	1.76	1896	9.9
March	34.2	86	1910	—3	1890	2.30	2.59	1900	8.9
April	46.6	89	1896	16	1909	3.05	3.09	1910	3.9
May	58.6	95	1895	24	1903	3.78	2.08	1914	T.
June	67.5	98	1901	32	1913	3.80	2.94	1915	......
July	72.0	101	1901	41	1907	3.27	2.60	1902	......
August	69.1	100	1906	40	1907	3.35	2.92	1914	......
September	63.1	102	1906	28	1904	2.91	3.41	1906	......
October	51.2	93	1905	18	1904	2.96	2.95	1896	T.
November	40.0	80	1909	10	1905	1.92	2.40	1889	1.8
December	29.1	65	1901	—11	1914	2.28	1.87	1901	10.0
Year	48.7	102	1906	—24	1904	33.48	3.41	1906	42.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is principally a hilly upland, broken by the deep ravines of streams. The highest points are 400 to 600 feet above the valleys, and 1,300 to 1,500 feet above tide. The ridges, which extend generally north and south, have steep slopes and broad, rolling summits. A deep valley extending south from Seneca Lake divides the highlands into two general systems. This allows easy communication between the Susquehanna valley and the central portion of the state. Chemung River, which flows southeast through the southern part of the county, cuts the ridges diagonally. Wide, alluvial flats bordered by steep hillsides extend along nearly the whole course. Catharine Creek flows north through the central valley and empties into Seneca Lake.

The soil is a gravelly and sandy loam intermixed in some places with clay. The valleys are covered with a deep rich alluvium. The highlands are best adapted to pasturage.

DESCRIPTION BY TOWNSHIPS

ASHLAND: The surface is a hilly upland broken by the deep valleys of streams. The Chemung River crosses the town, receiving the waters of several tributaries. The soil in the valleys is a fine quality of gravelly loam; on the hills it is of a slaty nature, well adapted to the cultivation of tobacco.

Products: Tobacco, vegetables, and general farm crops.

Average values of farm land range from $15 to $100 an acre.

BALDWIN: The surface is a hilly upland broken by the deep valleys of Baldwin and Wynkoop creeks. The soil on the hills is a clayey and shaly loam underlaid by hardpan; in the valleys it is gravelly loam.

Products: Hay, buckwheat, rye, and dairy products.

Average values of farm land range from $10 to $50 an acre.

BIG FLATS: The surface consists of a broken upland in the north and south divided by a wide intervale or flat which extends northeast from the Chemung River through the center of the town. The soil is a slaty loam on the hills and a productive gravelly loam in the valleys.

Products: Dairy products, tobacco, wheat, buckwheat, potatoes, oats, barley, and corn.

Average values of farm land range from $10 to $300 an acre.

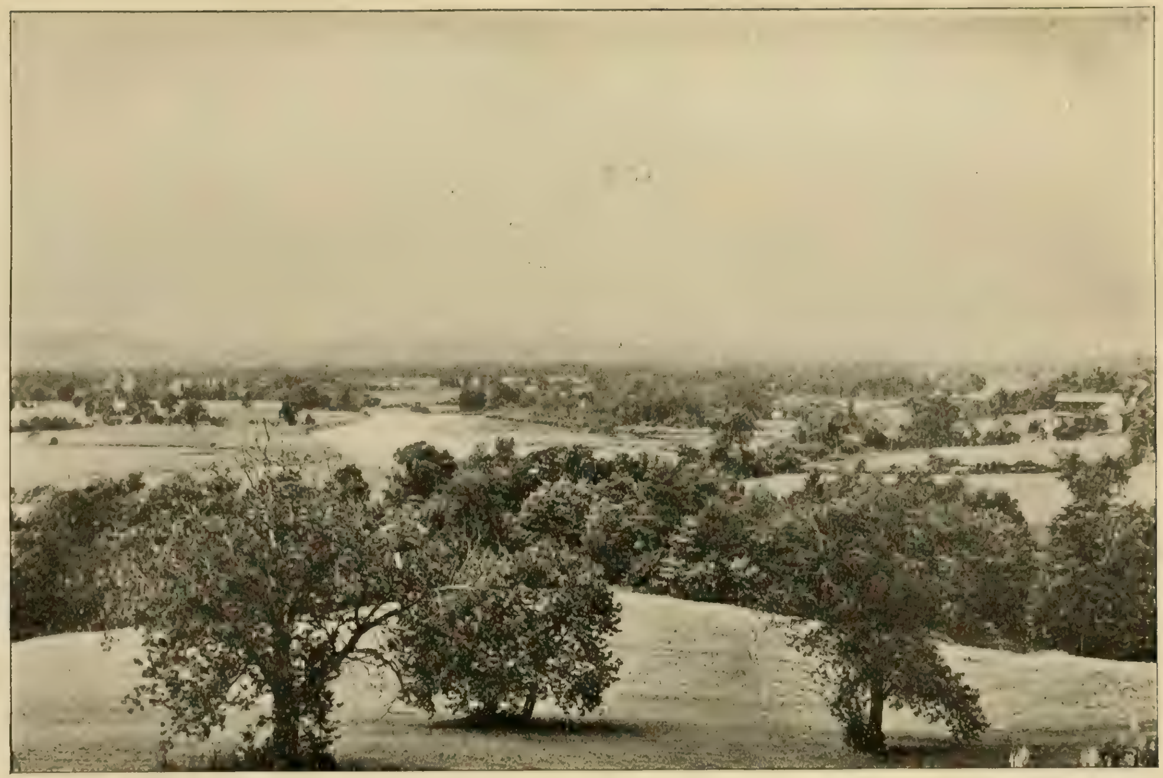


FIG. 44.— CHEMUNG RIVER AND VALLEY — ELMIRA IN THE DISTANCE

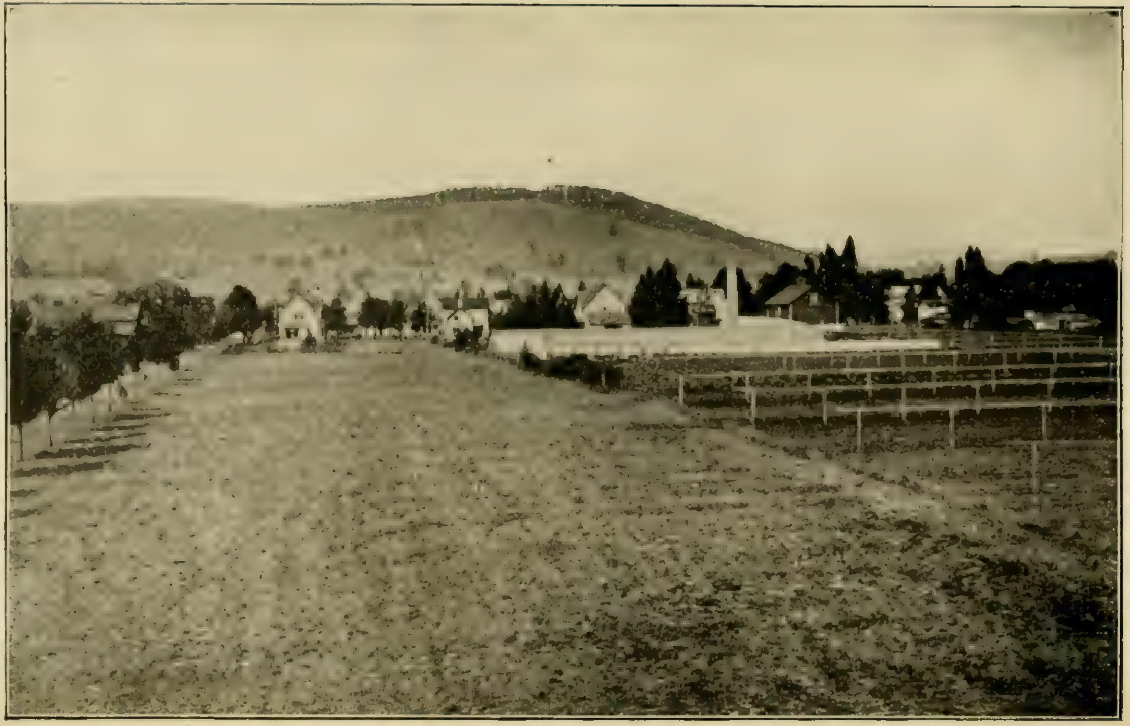


FIG. 45.— PROGRESSIVE FARMING IN CHEMUNG COUNTY

CATLIN: The surface is a hilly upland, the highest summits being 1,800 feet to 1,900 feet above sea level. The soil is chiefly a gravelly loam.

Products: Rye, hay, buckwheat, oats, and potatoes.

Average values of farm land range from $5 to $70 an acre.

CHEMUNG: The surface is a hilly upland, broken by deep narrow valleys. The Chemung River flows through the southern part. Wynkoop Creek flows south through the center in a deep valley bordered by steep hillsides. The soil on the uplands is a gravelly loam; in the valleys the gravel is mixed with alluvium.

Products: Rye, hay, oats, corn, and tobacco.

Average values of farm land range from $15 to $125 an acre.

ELMIRA: The surface is hilly on the east and west, with a wide valley extending through the center. The principal streams are the Chemung River and its tributaries. The soil on the uplands is a gravelly loam; in the valleys it is a productive sandy loam.

Products: Dairy products, general farm crops, vegetables, and tobacco.

Average values of farm land range from $15 to $100 an acre.

ERIN: The surface is a hilly upland broken by the deep, narrow valleys of streams. The soil is a medium quality of gravelly loam.

Products: Hay, buckwheat, oats, potatoes, and rye.

Average values of farm land range from $10 to $50 an acre.

HORSEHEADS: The surface is rolling and level in the west and hilly in the east. The principal streams are Newtown Creek and its branches. The soil is generally a good quality of gravelly loam.

Products: Beans, hay, buckwheat, wheat, potatoes, vegetables, and dairy products.

Average values of farm land range from $15 to $150 an acre.

SOUTHPORT: The surface is mostly a hilly upland broken by the deep valleys of streams. The Chemung River, which forms part of the northern boundary, is bordered by wide, fertile, alluvial flats. Seely Creek is the principal stream. The soil on the hills is a slaty loam and in the valleys a fine quality of gravelly loam.

Products: Vegetables, onions, tobacco, corn, and dairy products.

Average values of farm land range from $10 to $350 an acre.

VAN ETTEN: The surface is a hilly upland. Cayuta Creek, which flows through the center, is the principal stream. On the hills the soil is a clayey loam and in the valleys a gravelly loam.

Products: Dairy products, hay, buckwheat, oats, and rye.

Average values of farm land range from $10 to $70 an acre.

VETERAN: The surface is principally a hilly upland. Catharine Creek flows north along the west border. The soil is clayey and gravelly loam of good quality.

Products: Potatoes, hay, corn, wheat, buckwheat, barley, oats, rye, dairy products, and apples.

Average values of farm land range from $20 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The main lines of the Erie and the Delaware, Lackawanna and Western extend through the southern and western parts of the county, passing through Elmira, from which point a branch of the former extends southwest into Pennsylvania.

The Northern Central Railroad passes through Elmira and extends north and south through the county, reaching Lake Ontario at Sodus Point.

From Van Etten the Lehigh Valley Railroad takes five different directions. Of these lines two reach Ithaca, from that point extending both northeast and northwest. A third line extends to Geneva, a fourth to Elmira, and a fifth south into Pennsylvania. The New York Central and Hudson River Railroad crosses the extreme western side of the town of Catlin, extending to Corning on the southwest and connecting with other lines at Geneva and Lyons.

Electric Roads

An electric line follows the course of the Erie and the Delaware, Lackawanna and Western railroads through the southern and western parts of the county. From Elmira another electric road extends north to Watkins in Schuyler County.

Improved Highways

An improved highway from Binghamton extends through the southern part of the county to Elmira, thence north to Watkins. From Elmira roads extend west to Fitch Bridge, southeast to Wellsburg, and southwest to Williamsport, Pa. Another road extends east and west through the county, passing through Erin, Horseheads, and Big Flats to Corning. From this road a short division runs north to Catlin.

There are in the county 83 miles of completed improved highways, with eight miles additional under construction.

AVAILABLE MARKETS

Elmira affords a good market for a large amount of milk as well as truck crops and other farm products.

More than 4,500 people are employed at the Willys-Morrow plant, where parts for the Willys-Knight and Overland cars are made. Elmira industries also include the Kennedy Valve Mfg. Co., American LaFrance Fire Engine Co., Eclipse Machine Company, Thatcher Mfg. Co., Elmira Foundry Co., and a number of other concerns, all of which employ a large number of men. A state reformatory is located at Elmira.

The greater part of the milk collected in Chemung County is manufactured into evaporated milk. A portion of the milk is sold as market milk, and butter and cheese are made to some extent.

In the southern part of the county many farmers take advantage of the Waverly and Sayre markets to dispose of their products.

With splendid railroad facilities, producers in Chemung County ship poultry, eggs, and other supplies that cannot be sold in the local markets, to New York and Philadelphia.

The agricultural organizations are as follows:

Chemung County Agricultural Society.
Chemung County Cooperative Sheep Breeders' Association, In
Chemung County Dairymen's League.
Chemung County Farm Bureau Association.
Chemung County Fruit Growers' Association.
Chemung County National Farm Loan Association.
Chemung Valley Holstein Breeders' Association.
Elmira Poultry Association.
Granges: Pomona and 10 subordinate granges.

EDUCATIONAL FACILITIES.

At Elmira is located the Elmira College for Women. An approved course in agriculture is given at Horseheads.

Schools registered as having facilities suitable for maintaining approved courses in high school and academic work are located at Big Flats, Breesport, Elmira, Elmira Heights, Horseheads, Van Etten, and Wellsburg.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	226,772 acres
Number of farms	2,193
Per cent of farm land improved	75.4

LIVE STOCK PRODUCTS

Milk sold	2,822,595 gal.
Cream sold	11,753 gal.
Butter fat sold	435,633 lbs.
Butter produced	182,373 lbs.
Cheese produced	6,200 lbs.
Eggs produced	631,442 doz.
Wool produced	4,463 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	5,421
Cattle	17,229
Sheep	7,003
Swine	4,099
Poultry	92,712

BEES

Number of colonies	2,240

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	3,955	106,999 bu.
Oats	15,371	253,138 bu.
Wheat	2,220	47,219 bu.
Barley	618	8,713 bu.
Buckwheat	12,087	188,079 bu.
Rye	2,923	43,505 bu.
Hay and forage	45,468	51,053 tons
Special Crops:		
Potatoes	3,724	370,110 bu.
Vegetables, other than potatoes	969	....
Dry edible beans	137	1,543 bu.
Dry peas	21	140 bu.
Fruits:		
Apples	62,779 trees	84,726 bu.
Peaches and nectarines	3,729 trees	1,781 bu.
Pears	5,458 trees	4,589 bu.
Plums and prunes	5,375 trees	2,529 bu.
Cherries	7,219 trees	1,983 bu.
Quinces	45 trees	6 bu.
Grapes	3,579 vines	50,273 lbs.
Small fruits	142 acres	199,321 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,785	1,696

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	5,248	4,162
Cattle	18,244	16,607
Sheep	3,372	2,896
Swine	2,644	2,393
Poultry	85,271	73,571

BEES

	1917 Number	1918 Number
Number of colonies	2,146	1,358

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	2,084	1,975	48,280 bu.
Oats	11,205	10,619	307,678 bu.
Barley	761	737	11,013 bu.
Buckwheat	7,919	6,177	81,548 bu.
Wheat (winter)	1,721	2,021	49,576 bu.
Wheat (spring)	114	158	1,623 bu.
Rye	2,155	2,018	24,356 bu.
Hay and forage:			
Alfalfa	597	533	970 tons
Other hay	38,760	35,425	21,221 tons
Corn (ensilage)	4,028	3,571	22,220 tons
Corn (fodder)	....	1,648	....
Special crops:			
Field beans	626	1,025	5,396 bu.
Cabbage	86	227	3,927 tons
Potatoes	3,021	3,021	125,052 bu.
Roots raised for stock food	....	78	....
Canning factory crops	8	6	....
Other vegetables and garden crops	440	501	....
Fruits:			
Apples	1,996	2,191	45,240 bu.
Peaches	75	152	807 bu.
Pears	39	111	960 bu.
Plums	31	25	25,725 lbs.
Cherries	47	102	9,283 lbs.
Quinces	....	5	75 bu.
Vineyard	6	11	4,503 lbs.
Small fruits	184	131	....

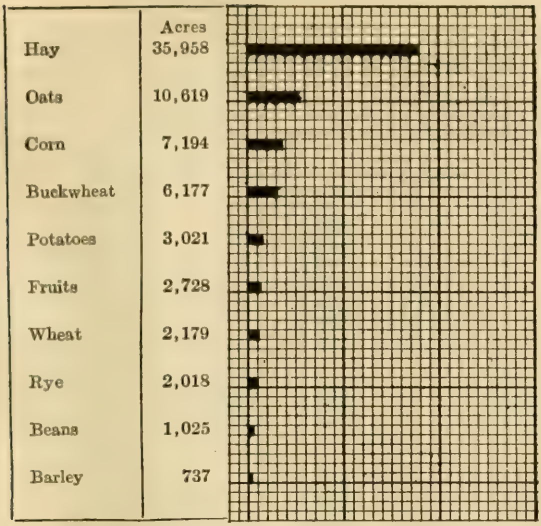


Fig. 46. Chart Showing Relative Acreage of Crops in Chemung County

CHENANGO COUNTY

This county lies in the central part of the state. It has an area of 572,160 acres. From north to south it extends approximately thirty-five miles, and from east to west twenty-seven miles. The population is shown in the following table:

POPULATION BY CITIES AND TOWNS

(Census of 1915)

*Norwich (city)	8,342
Afton	1,809
Bainbridge	2,004
Columbus	794
Coventry	793
German	412
Greene	2,959
Guilford	1,963
Lincklaen	532
McDonough	825
New Berlin	2,442
North Norwich	699
Norwich	1,201
Otselic	967
Oxford	3,073
Pharsalia	699
Pitcher	656
Plymouth	959
Preston	640
Sherburne	2,808
Smithville	932
Smyrna	1,139
Total	36,648

---

* Norwich is the county seat.

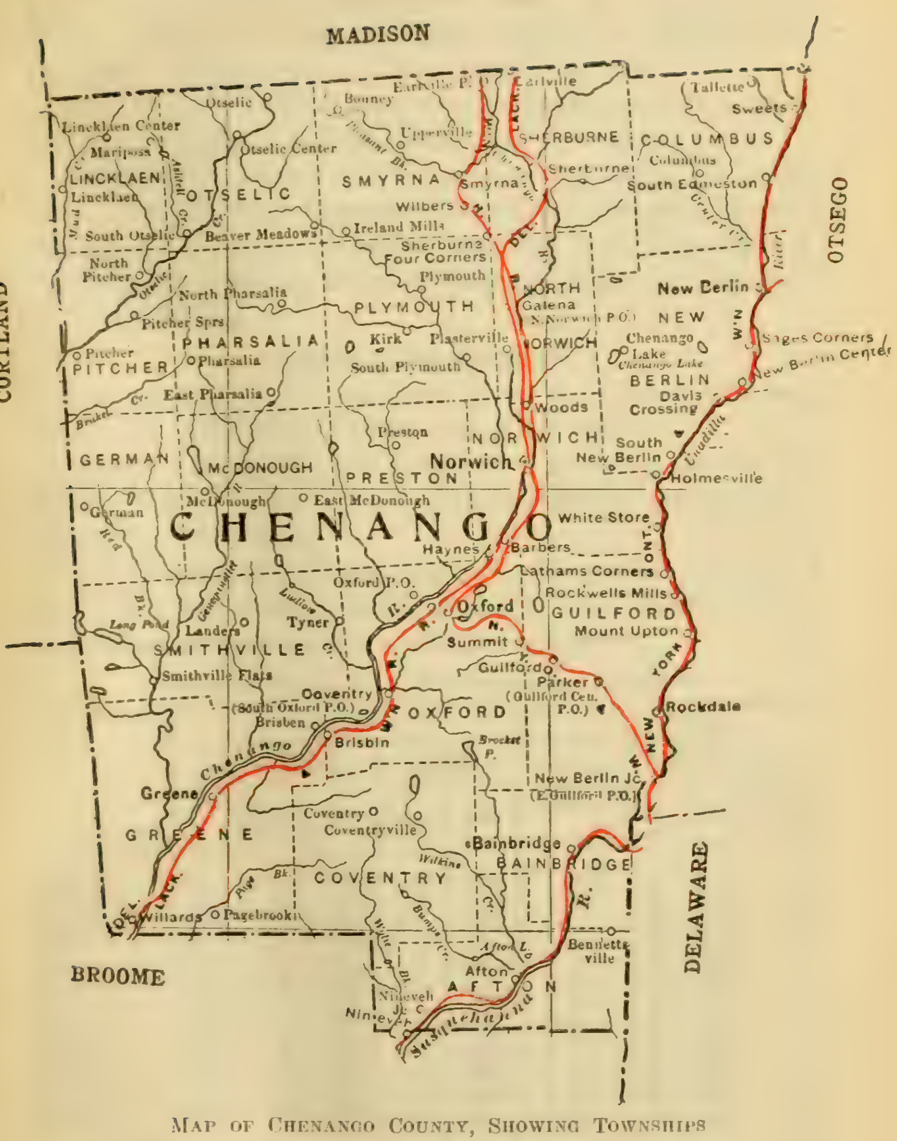
HISTORICAL ASSOCIATIONS

Chenango was formed from Herkimer and Tioga in 1798, and Oneida and Madison were afterward taken off. The Chenango River, which flows through the center, gives the name, which is derived from the Indian word "Ochenango," or "big bull-thistles."

The extinction of the Indian title to the land and the immediate subsequent opening of these lands by survey and sale to settlement was the signal for emigration from the states and counties east to this section of the country. Within two years from the close of the Revolution, the first permanent settlers were making their way through the forest, clearing small spaces, and erecting their rude log cabins. When once begun, settlement was rapid.

DEVELOPMENT OF INDUSTRY

The industries of Chenango County have been almost exclusively agricultural from the time of settlement. The land in many places being particularly suitable for grazing, dairying early received considerable attention and continued to develop until it has become the chief agricultural interest in the county. In the vicinity of Sherburne are some of the best herds and dairies


MADISON
CORTLAND
OTSEGO
DELAWARE
BROOME
CHENANGO
Otselic
Lincklaen Center
Mariposa
LINCKLAEN
Lincklaen
OTSELIC
Otselic Center
Bonney
Earlville P.
Earlville
Upperville
Pleasant Bk.
SMYRNA
Smyrna
Wilbers
SHERBURNE
Sherburne
Tallette
Sweets
COLUMBUS
Columbus
South Edmeston
Mud Cr.
South Otselic
Beaver Meadows
Ireland Mills
Sherburne Four Corners
Plymouth
North Pitcher
Otselic R.
North Pharsalia
PLYMOUTH
Pitcher Sprs
PHARSALIA
Pharsalia
Kirk
Plasterville
Pitcher
PITCHER
South Plymouth
East Pharsalia
Broken Cr.
NORTH NORWICH
Galena
N. Norwich P.O.
NEW BERLIN
New Berlin
Chenango Lake
Sages Corners
New Berlin Center
Davis Crossing
Woods
Preston
NORWICH
Norwich
South New Berlin
Unadilla
Holmesville
GERMAN
McDONOUGH
PRESTON
German
McDonough
East McDonough
White Store
Red Bk.
Haynes
Barbers
Lathams Corners
Rockwells Mills
Oxford P.O.
Oxford
GUILFORD
Mount Upton
Long Pond
Landers
Tyner
Summit
SMITHVILLE
Genegantslet
Guilford
Parker
Smithville Flats
Coventry
(South Oxford P.O.)
OXFORD
(Guilford Cen. P.O.)
Brisben
Brisbin
Chenango
Rockdale
Brackel P.
New Berlin Jc.
(E. Guilford P.O.)
Greene
GREENE
Coventry
Coventryville
Bainbridge
Wilkins
BAINBRIDGE
COVENTRY
Page Bk.
Willards
Pagebrook
Bennettsville
Afton L.
Afton
AFTON
Nineveh
Nineveh Jc.
Susquehanna
D.L.&W.
D.&H.
N.Y.O.&W.
N.Y.O.&W.
NEW YORK ONT.
Chenango R.

MAP OF CHENANGO COUNTY, SHOWING TOWNSHIPS

Red lines indicate railroads

in the state. Aside from market milk, the principal cash crops are hay, potatoes, and cabbage. There is a large amount of small grains and other crops grown, mostly for feeding on the farms. Poultry and eggs are largely produced in practically all the towns. Maple sugar is also a valuable product.

Forty years ago, when hops were profitable, they were grown to a limited extent in the northern part of the county.

Additional industries of importance in the county are as follows: The American Separator Company, Bainbridge; Norwich Pharmacal Company, Norwich; Gladding Fish Line Factory, South Otselic; Maydole Hammer Company, Norwich; Page Seed Company, Greene.

CLIMATE AND RAINFALL

The climatological records here given for Chenango County were taken at Oxford at an elevation of 976 feet.

Average dates for the last killing frost in spring and the first in fall are May 17 and September 24, respectively, giving a growing season of 130 days.

The following table, compiled from observations covering a period of fifty-one years, ending January, 1914, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT OXFORD

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	22.6	64	1833	—36	1836	2.84	1.20	1910*	17.4
February	22.4	60	1840	—33	1836	2.53	1.37	1890	18.2
March	31.4	77	1905	—19	1837	2.74	2.75	1900	13.7
April	43.8	87	1899	9	1836	2.82	2.15	1898	4.1
May	55.7	94	1895*	18	1903	3.72	3.17	1906	T.
June	64.0	98	1829	28	1843	3.76	3.57	1891	......
July	68.4	99	1898	35	1898	3.73	2.90	1899	......
August	65.8	96	1900	30	1832	3.80	2.20	1893	......
September	59.1	92	1896	17	1834	3.41	3.04	1890	......
October	47.3	85	1900	17	1904	3.17	2.40	1894	1.2
November	36.1	73	1895	2	1897*	2.62	1.80	1898	6.7
December	26.0	63	1901	—21	1841	2.83	2.45	1895	16.5
Year	45.4	99	1898	—36	1836	40.52	3.57	1891	77.8

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is a hilly upland, broken by the deep ravines of streams. The highlands consist of two principal ridges extending north and south, the first lying between the Unadilla and Chenango rivers and the second between the Chenango and the Otselic. These ridges are subdivided by numerous parallel and lateral valleys and their sides are often very steep. The summits are broad and rolling and of nearly uniform elevation throughout the county. The highest points are from 600 to 800 feet above the principal valleys.

The Susquehanna River flows through the southeast corner, receiving the Unadilla, which forms the greater part of the eastern boundary of the county. The valley of the Susquehanna consists generally of fertile and highly-cultivated intervales averaging a mile in width, and often bordered by steep and well-wooded hillsides.

The soils are almost entirely derived from the disintegration of limestone, slate, and sandstone. In a few localities is found a very limited amount of drift. On the hills the soil is principally a shaly loam and in the valleys a fine quality of productive alluvium.

DESCRIPTION BY TOWNSHIPS

AFTON: The surface consists principally of rolling uplands separated into two nearly equal parts by the broad valley of the Susquehanna. The hills rise by long and gradual ascents to a height of 300 to 500 feet above the valleys. They are generally susceptible of cultivation to their summits. The soil on the hills is a shaly loam and in the valleys a clayey loam and alluvium.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $15 to $60 an acre.

BAINBRIDGE: The surface is a rolling upland divided into two parts by the Susquehanna, which flows southwest through the center. The valley of the river is about one mile wide, and is bordered by moderately steep hillsides. The highest summits are 400 to 600 feet above the valleys. The soil on the hills is a gravelly and shaly loam; in the valleys it is a clayey loam and alluvium.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $15 to $60 an acre.

COLUMBUS: This town occupies a portion of the high ridge between Unadilla and Chenango rivers. The highest summits are 400 to 600 feet above the valleys. Unadilla River forms the eastern boundary, receiving several small tributaries. The soil is a gravelly and shaly loam.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $15 to $40 an acre.

COVENTRY: The highest elevations, midway between the Susquehanna and Chenango rivers, are about 1,700 feet above tide. The slopes are generally long and gradual and are arable to their summits. Harpers and Wylie creeks, flowing into the Susquehanna, are the principal streams. The soil is a gravelly, shaly loam, with occasional beds of red slaty loam.

Products: Milk and hay.

Average values of farm land range from $10 to $30 an acre.

GERMAN: The surface is hilly and abundantly watered by several brooks. The soil is a sandy, gravelly loam on the hills and alluvium in the valleys.

Products: Milk and hay.

Average values of farm land range from $10 to $20 an acre.

GREENE: The surface is a rolling and hilly upland, broken by the ravines of the streams. The hills rise from 500 to 700 feet above the Chenango River, which flows southwest through the center of the town in a broad valley about one mile in width. Genegantslet Creek flows south through the western part in a wide valley, joining the Chenango a few miles below the village of Greene. The soil is a gravelly and shaly loam on the hills and alluvium in the valleys.

Products: Milk, potatoes, and hay.

Average values of farm land range from $15 to $60 an acre.

GUILFORD: The surface is hilly and broken, including most of the elevated lands between the Chenango and Unadilla rivers. The summits of the hills rise from 200 to 700 feet above the valleys. It is drained by the Unadilla, which forms the eastern boundary, and by Guilford Pond Creek and several smaller streams. The soil is a gravelly and slaty loam occasionally intermixed with clay.

Products: Milk and hay.

Average values of farm land range from $15 to $50 an acre.

LINCKLAEN: The surface is a hilly, broken upland divided into ridges by narrow ravines extending north and south. The slopes are usually steep and the highest summits rise from 1,800 to 1,900 feet above sea level. Mud Creek, a branch of the Otselic, flows through the western part of the town. Several smaller streams rise in the south and east. The soil is a shaly and clayey loam.

Products: Milk, potatoes, and hay.

Average values of farm land range from $10 to $30 an acre.

MCDONOUGH: The surface is hilly, in some places being broken by deep ravines and sharp ridges extending north and south. It is drained south by several streams, the largest of which are Bowmans and Genegantslet creeks. Genegantslet Lake lies near the west border. The soil is a clayey loam better adapted to grazing than to tillage.

Products: Milk and hay.

Average values of farm land range from $10 to $35 an acre.

NEW BERLIN: The surface is a rolling and hilly upland, the ridges extending north and south. The Unadilla River forms the eastern boundary and Great Brook flows south through the center. The soil is a shaly loam, occasionally intermixed with clay.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $15 to $50 an acre.

NORTH NORWICH: The valley of the Chenango River occupies a considerable portion of the western and northern part, and high rolling uplands rise on either side. The summits of the hills are 200 to 600 feet above the valley. It is drained by Chenango River, Fly Brook, and several other small streams. The soil is a gravelly and slaty loam, in some places mixed with clay.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $20 to $65 an acre.

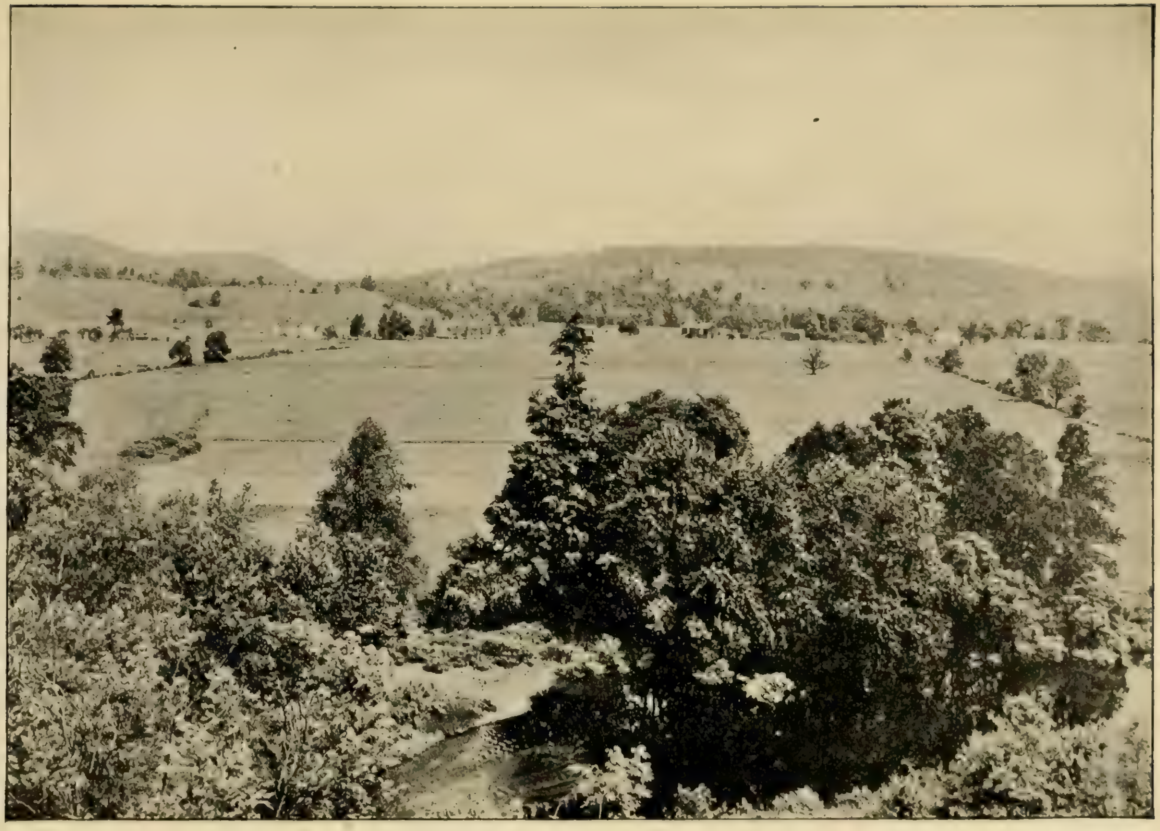


FIG. 47.— FARM LANDS IN CHENANGO VALLEY

NORWICH: The surface consists of two high rolling ridges separated by the valley of the Chenango River. The highest summits are about 500 feet above the valleys. The Canasawacta and several smaller streams are tributary to the Chenango. Unadilla River forms the eastern boundary. On the uplands the soil is a shaly and gravelly loam; in the valleys it is a gravelly loam and alluvium.

Products: Milk, potatoes, and hay.

Average values of farm land range from $30 to $70 an acre.

OTSELIC: The surface is hilly, consisting of high ridges 500 to 800 feet above the valley of Otselic Creek; these ridges are broken by the ravines of streams. The soil on the hills is a shaly loam and in the valleys it is alluvium.

Products: Milk, potatoes, and hay.

Average values of farm land range from $10 to $35 an acre.

OXFORD: The surface is divided in two parts by the Chenango valley. The hills bordering the river rise above it from 500 to 800 feet. The tributaries of the Chenango include Eddy and Bear brooks from the east and Fly Meadow, Mill, and Bowman brooks from the west. The soil on the hills is a shaly loam; in the valleys it is a gravelly loam and alluvium.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $20 to $65 an acre.

PHARSALIA: The surface is a rolling and hilly upland occupying a portion of the watershed between Chenango and Otselic rivers. Canasawacta, Genegantslet, and Brakel creeks take their rise near the center of the town. The soil is a shaly loam.

Products: Milk, cheese, and hay.

Average values of farm land range from $10 to $20 an acre.

PITCHER: The surface consists principally of two high ridges rising 1,600 or 1,700 feet above tide. Otselic River flows through the center and Brakel Creek through the southern part. The ravines of the streams are narrow and are bordered by steep hillsides. The soil is a shaly and gravelly loam.

Products: Milk, cheese, potatoes, and hay.

Average values of farm land range from $15 to $35 an acre.

PLYMOUTH: The surface is a hilly upland broken by deep ravines. Canasawacta Creek and its branches flow through deep narrow valleys, which form a junction near the center of the town. The soil is a gravelly and clayey loam.

Products: Milk, potatoes, and hay.

Average values of farm land range from $15 to $40 an acre.

PRESTON: The surface is a high rolling upland, divided into two distinct ridges. The summits of the hills are 200 to 700 feet above the Chenango valley at Norwich, where the elevation is about 1,000 feet. The principal streams are Fly Meadow Creek and Mill Brook. The soil is gravelly and slaty loam.

Products: Milk, potatoes, and hay.

Average values of farm land range from $10 to $40 an acre.

SHERBURNE: The surface is an upland broken by the Chenango River and several of its tributaries. The highest summits rise from 200 to 700 feet above the valleys. The soil is chiefly a gravelly and slaty loam; in the valleys a sandy loam sometimes occurs.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $20 to $70 an acre.

SMITHVILLE: The surface consists of high ranges of hills separated by narrow valleys extending north and south. It is drained south by Genegantslet Creek and several other streams flowing into the Chenango. The soil is a gravelly, clayey loam in the valleys and clay and slaty loam on the hills.

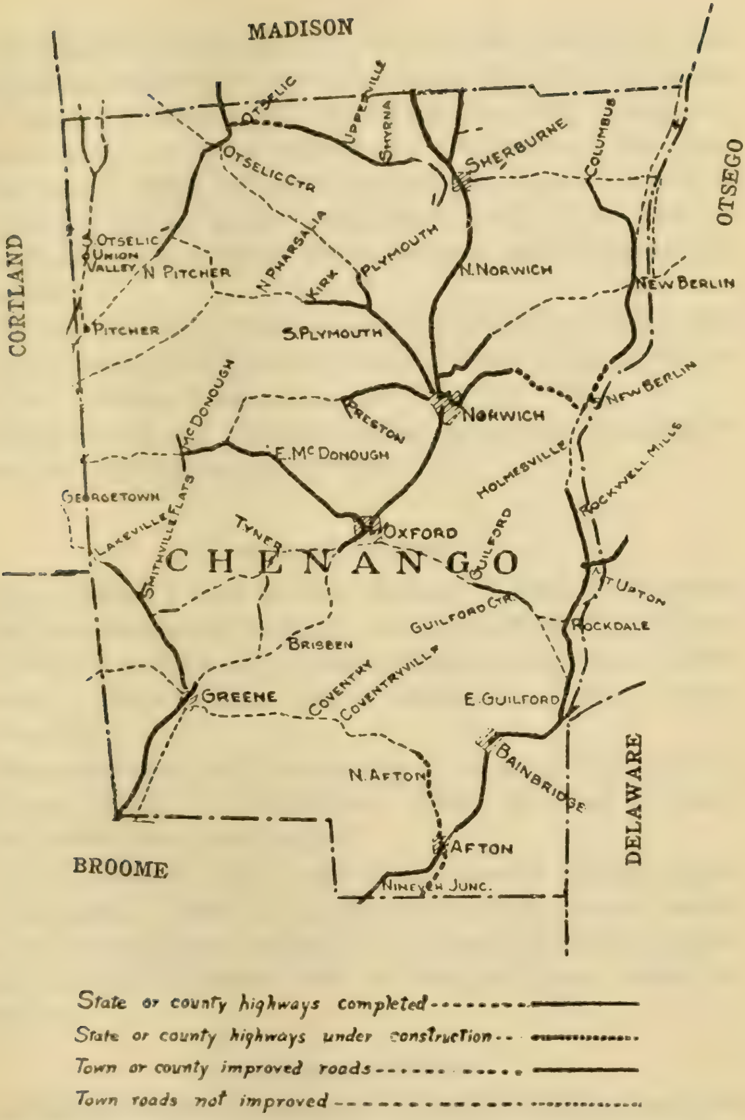
Products: Milk, hay, and potatoes.

Average values of farm land range from $15 to $35 an acre.

SMYRNA: The surface is a broken and hilly upland, the highest summits being about 1,800 feet above tide. The principal stream is Pleasant Brook, flowing southeast through the center. This and several smaller streams flow through narrow valleys bordered by steep hillsides. The soil is a gravelly and shaly loam.

Products: Milk, potatoes, hay, and cabbage.

Average values of farm land range from $20 to $60 an acre.


MADISON
CORTLAND
OTSEGO
BROOME
DELAWARE
CHENANGO
Otselic
Upperville
Smyrna
Sherburne
Columbus
Otselic Ctr
N. Pharsalia
Plymouth
S. Otselic
Union Valley
N. Pitcher
Kirk
N. Norwich
New Berlin
Pitcher
S. Plymouth
Preston
Norwich
S. New Berlin
McDonough
E. McDonough
Holmesville
Rockwell Mills
Georgetown
Smithville Flats
Lakeville
Tyner
Oxford
Guilford
Guilford Ctr.
Upton
Rockdale
Brisben
Greene
Coventry
Coventryville
E. Guilford
Bainbridge
N. Afton
Afton
Nineveh Junc.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Delaware, Lackawanna and Western line between Utica and Binghamton crosses the center of the county through the Chenango River valley. At New Berlin junction the New York, Ontario and Western sends one line northwest and north through the center of the county, which terminates at Oswego. Another line from the junction extends north through the Unadilla River valley to New Berlin, then entering Otsego County and terminating at Edmeston.

The Unadilla Valley Railroad continues from New Berlin along the east border to Bridgewater, where it makes direct connection over the Delaware, Lackawanna and Western to Utica.

The Delaware and Hudson between Albany and Binghamton crosses the southeastern part of the county.

Improved Highways

From Oxford a road extends through Norwich to the north, which, when sections in Madison County are completed, will reach to Utica and to Syracuse. Four additional sections radiate from Norwich. There is also a section leading from Oxford west to McDonough.

The southeastern part is crossed by an improved highway leading from Albany to Binghamton. From this road a branch extends north from East Guilford.

In the southwest a road leads from Lakeville through Greene to Binghamton. There is a section also in both the northeastern and northwestern parts, making in all a total of 133 miles of completed improved highways with 19 miles additional under construction.

AVAILABLE MARKETS

Oxford and Greene are the most important shipping points for poultry products. Norwich is the principal local market for Chenango County produce. It is also the seat of the Norwich Pharmacal Company, which is by far the largest manufacturing concern in the county. The Maydole hammer factory at this place is one of the largest and best known establishments of its kind.

More than 192,000,000 pounds of milk, the production of about 50,000 cows, is collected at the various milk establishments of the county. About 60 per cent. of this quantity is sold as market milk and cream. Over 500,000 pounds of butter, more than 1,500,000 pounds of American cheese, and 50,000,000 pounds of condensed and evaporated milk, besides some powdered whole and skim milk, are among the manufactured products.

The agricultural organizations are as follows:

Afton Driving Park and Agricultural Association.
Bainbridge Farmers' Creamery.
Chenango County Agricultural Society.
Chenango County Beekeepers' Society.
Chenango County Dairymen's League.
Chenango County Farm Bureau Association.
Chenango County Sheep and Wool Growers' Association.
Chenango National Farm Loan Association.
Chenango Valley Poultry and Pet Stock Association.
Coventryville Cooperative Butter and Cheese Company.
Granges: Pomona and fifteen subordinate granges.
Independent Producers, Inc.
Madison-Chenango Counties Holstein-Friesian Breeders' Club.
New Berlin Cooperative Creamery Company.
North Chenango Dairy Improvement Association.
Oxford Rural Produce Company, Inc.
Pharsalia National Farm Loan Association.
South New Berlin Creamery Company.
Tri-County Holstein-Friesian Breeders' Association.

EDUCATIONAL FACILITIES

Approved courses in agriculture are given in schools at Greene and Oxford, the former including a course in home making. Schools registered as having facilities suitable for maintaining approved courses in high school and academic work are located at Afton, Bainbridge, Greene, Guilford, McDonough, Mount Upton, New Berlin, Norwich, Oxford, Sherburne, Smyrna, South New Berlin, and South Otselic.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	539,084 acres
Number of farms	4,258
Per cent of farm land improved	65.6

LIVE STOCK PRODUCTS

Milk sold	25,190,489 gal.
Cream sold	2,001 gal.
Butter fat sold	537,241 lbs.
Butter produced	128,452 lbs.
Cheese produced	300 lbs.
Eggs produced	1,778,267 doz.
Wool produced	3,233 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	10,493
Cattle	77,994
Sheep	5,866
Swine	6,327
Poultry	245,256

BEES

Number of colonies	2,598

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	4,065	177,897 bu.
Oats	13,945	440,758 bu.
Wheat	35	909 bu.
Barley	185	4,939 bu.
Buckwheat	3,554	75,922 bu.
Rye	71	1,104 bu.
Hay and forage	147,816	222,054 tons
Special crops:		
Potatoes	4,843	671,087 bu.
Vegetables, other than potatoes	1,284	....
Dry edible beans	37	494 bu.
Dry peas	7	137 bu.
Fruits:		
Apples	145,604 trees	234,738 bu.
Peaches and nectarines	24 trees	9 bu.
Pears	7,474 trees	6,650 bu.
Plums and prunes	5,414 trees	2,044 bu.
Cherries	3,603 trees	1,000 bu.
Quinces	8 trees	....
Grapes	2,041 trees	52,073 lbs.
Small fruits	56 acres	78,380 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,978	3,529
LIVE STOCK AND POULTRY		
Horses and mules	9,939	9,158
Cattle	72,121	65,761
Sheep	3,886	3,028
Swine	5,457	5,246
Poultry	295,923	218,393
BEES		
Number of colonies	1,843	2,582

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	1,785	2,035	54,360 bu.
Oats	16,870	14,380	377,625 bu.
Barley	420	525	8,243 bu.
Buckwheat	3,692	4,238	61,248 bu.
Wheat (winter)	174	228	3,270 bu.
Wheat (spring)	79	589	8,326 bu.
Rye	190	130	1,899 bu.
Hay and Forage:			
Alalfa	404	355	855 tons
Other hay	139,672	122,393	165,668 tons
Corn (ensilage)	9,442	7,351	67,228 tons
Corn (fodder)	....	1,642	....
Special Crops:			
Field beans	172	477	3,732 bu.
Cabbage	702	835	4,699 tons
Potatoes	4,028	4,762	345,711 bu.
Roots raised for stock food	....	192	....
Canning factory crops	9	78	....
Other vegetables and garden crops	601	559	....
Fruits:			
Apples	2,572	4,024	185,411 bu.
Pears	24	30	1,115 bu.
Plums	14	21	15,326 lbs.
Cherries	10	5	3,840 lbs.
Vineyard	....	1	420 lbs.
Small fruits	108	110	....

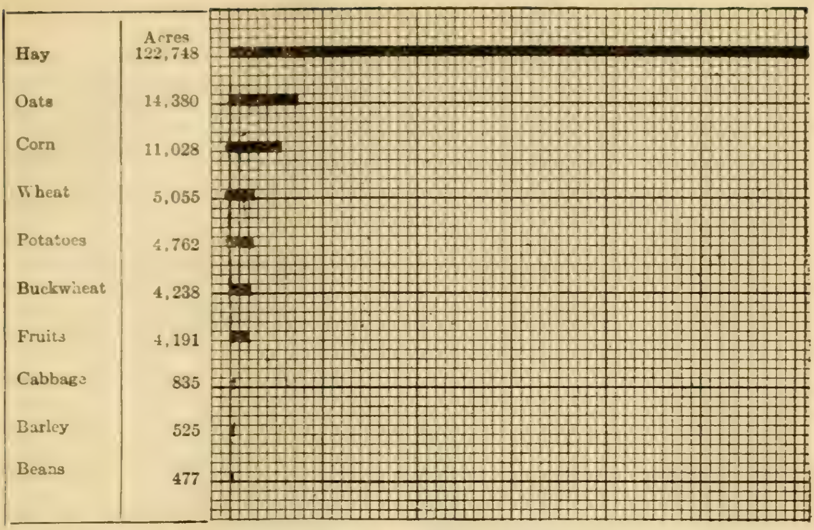


FIG. 48. CHART SHOWING RELATIVE ACREAGE OF CROPS IN CHENANGO COUNTY

CLINTON COUNTY

This county lies in the northeastern corner of the state, the province of Quebec forming the northern boundary and Lake Champlain separating it from the state of Vermont on the east. The area is 671,360 acres. From north to south the county extends nearly forty miles, and from east to west approximately thirty miles.

The population is distributed throughout the county as follows:

Population by Cities and Townships

(Census of 1915)

*Plattsburg (city)	10,134	Ellenburgh	2,965
Altona	2,328	Mooers	3,175
Ausable	1,968	Peru	2,356
Beekmantown	1,862	Plattsburg	2,380
Black Brook	1,962	Saranac	3,114
Champlain	4,579	Schuyler Falls	1,633
Chazy	3,187		
Clinton	1,386	Total	47,561
Dannemora	4,532		

---

* Plattsburg is the county seat.

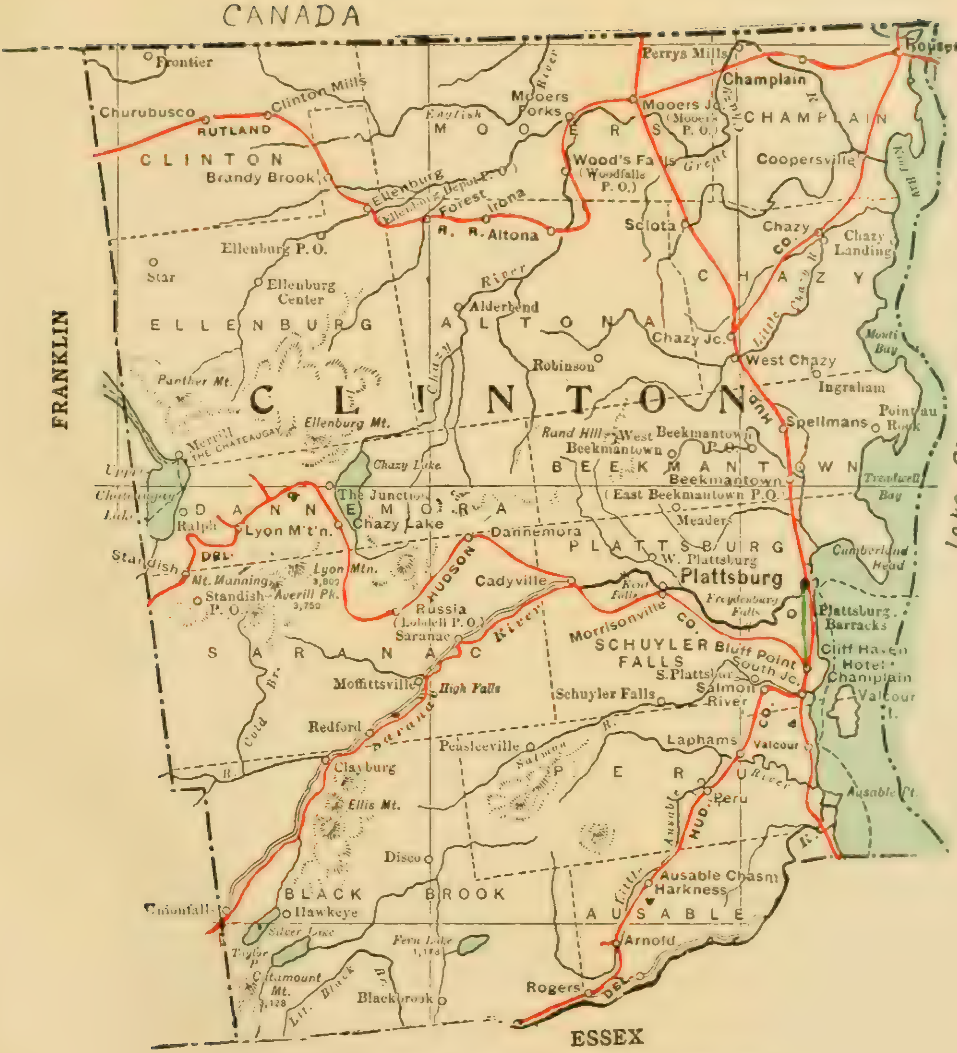
HISTORICAL ASSOCIATIONS

The county was formed from Washington in 1788 and named for George Clinton, the first state governor. Both Essex and Franklin counties were included within its boundary, as was also St. Lawrence, some years later. The northern boundary of the county was finally agreed upon about the middle of the nineteenth century, when it was fixed by the Webster-Ashburton Treaty.

The first white man to visit this county was Samuel Champlain, in 1609, under the auspices of the French. Until the final surrender of Canada to the English in 1760, the French claimed the whole of this region and the lands occupied were held under French grants. After this time settlement spread rapidly down the lake shore. By the terms of the treaty the French settlers were to be secured in their rights, but the governors of New York made conflicting grants that gave rise to controversies and seriously retarded the progress of settlement. During the Revolution the

---

Note: Plattsburg now has a population of 10,900.


CANADA
Frontier
Churubusco
Clinton Mills
RUTLAND
CLINTON
Brandy Brook
Ellenburg
Ellenburg Depot P.O.
Forest
Irona
R. R.
Altona
Ellenburg P.O.
Star
Ellenburg Center
ELLENBURG
Panther Mt.
Ellenburg Mt.
Merrill
THE CHATEAUGAY
Upper Chateaugay Lake
Chazy Lake
The Junction
DANNEMORA
Ralph
Lyon M't'n.
Chazy Lake
Dannemora
Standish
D&L.
Mt. Manning
3,800
Lyon Mtn.
Standish P.O.
Averill Pk.
3,750
HUDSON
Cadyville
Russia
(Lobdell P.O.)
Saranac
SARANAC
Moffittsville
High Falls
Cold Br.
Redford
Saranac River
Claybury
Ellis Mt.
Disco
BLACK BROOK
Hawkeye
Silver Lake
Union Falls
Taylor P.
Catamount Mt.
3,128
Lit. Black Br.
Blackbrook
Fern Lake
1,178
Perrys Mills
Rouses Point
Champlain
Mooers Forks
English
MOOERS
Mooers Jc.
(Mooers P.O.)
CHAMPLAIN
Chazy R.
Great
Wood's Falls
(Woodfalls P.O.)
Coopersville
King Bay
Sciota
Chazy
Chazy Landing
CO.
CHAZY
Alderbend
River
ALTONA
Chazy
Chazy Jc.
Little Chazy R.
West Chazy
Robinson
Ingraham
Monti Bay
CLINTON
HUD.
Spellmans
Point au Roche
Rand Hill
West Beekmantown
Beekmantown P.O.
BEEKMANTOWN
Beekmantown
(East Beekmantown P.O.)
Treadwell Bay
Meaders
PLATTSBURG
W. Plattsburg
Plattsburg
Cumberland Head
Kent Falls
Fredenburg Falls
Plattsburg Barracks
Morrisonville
CO.
SCHUYLER FALLS
Bluff Point
South Jc.
S. Plattsburg
Cliff Haven
Hotel Champlain
Valcour I.
Salmon River
Schuyler Falls
Peasleeville
Salmon
Laphams
Valcour
PERU
R.
River
Peru
Ausable Pt.
Ausable
HUD.
Ausable Chasm
Harkness
Little Ausable
AUSABLE
Arnold
Rogers
D&L
FRANKLIN
Lake Champlain
ESSEX

MAP OF CLINTON COUNTY, SHOWING TOWNSHIPS
Red, railroads; green, electric roads

few settlements scattered along the lake shore were broken up, but within ten years after its close settlements were made at all the principal places bordering the lake.

On October 11, 1776, the first naval battle of the Revolution was fought in the channel between Valcour Island and the shore of what is now the town of Peru.

During the War of 1812 this county was the seat of many military transactions, and along its borders many engagements took place. Those on Lake Champlain were considered among the most brilliant of the war, and Plattsburgh was made memorable by the victory of Commodore McDonough and General McComb over the British naval and land forces on September 11, 1814. The immense sums of money expended within this county during the war greatly stimulated its industry; and, although Plattsburgh was twice in the hands of the enemy and partly burned, business still prospered. At the close of the war business was destroyed by the commercial reaction that followed, but it was resumed upon the completion of the Champlain Canal in 1823.

The Canadian rebellion in 1837, commonly known as "the Patriot War," found many sympathizers on this side of the line and active attempts were made to establish communication between Canada and the United States at Rouses Point. The success of the plot was prevented, however, by a garrison of United States troops stationed at that point.

The building of the Ogdensburg and Lake Champlain railroad, now the Rutland, and the New York and Canada, now known as the Delaware and Hudson railroad, opened a new era in the history of the county, as each offered greater facilities for marketing produce. To Clinton County belongs the distinction of having the first steamboat in the world after Fulton had demonstrated the success of the "Clermont" on the Hudson. This was the "Vermont," whose first voyage was made on Lake Champlain in 1809. The development of Clinton County has been largely due to the establishment of steamboat transportation along its border.

Clinton prison was established in 1846 with the idea of employing convict labor in mining and smelting iron. As the plan proved to be a heavy loss to the state, however, it was later abandoned.

The old state road extending along the west shore of Lake Champlain was opened in 1790 for purposes of communication between Montreal and New York and at once became a famous thoroughfare.

DEVELOPMENT OF INDUSTRY

The first residents of Clinton and Essex counties were lured from agriculture by the attractions of the lumber trade, and their supplies of grain and provisions were largely brought from Vermont and Canada. For many years after the Revolution the timber trade formed a prominent traffic, and agriculture received only limited attention. Lumber was rafted down the Richelieu and the St. Lawrence to Quebec, from whence it was shipped to England. Other exports included ashes, peltry, and iron.

Lumbering and mining are still of great importance. In the vicinity of Saranac thousands of cords of pulp wood are cut annually. Large quantities of iron ore are mined at Lyon Mountain and Standish. Iron manufactures are of little importance in the county at the present time. The production of maple sugar, which was also one of the early industries, received considerable attention. Approximately 50 per cent of the country is too rough for profitable agriculture. The eastern portion was first to be developed along agricultural lines, when wheat was the most important crop. Potatoes were grown and at one time considerable potato starch was manufactured. For more than fifty years hay, oats, barley, buckwheat, corn, and potatoes have been staple crops. Dairying is followed throughout the county, although until after the building of the Rutland railroad the northern part gave little attention to this occupation. It is now one of the best dairy sections of the county. The more favorable potato growing sections, notably Saranac, Ellenburgh, and Churubusco, grow not only good eating stock but excellent seed potatoes for Long Island and New Jersey. Clinton County conditions are ideal for producing the McIntosh apples, which grow nearly to perfection, especially in the towns of Schuyler Falls, Peru, and parts of Plattsburgh.

The Au Sable mountains in the west contain valuable mines of iron ore, this county and Essex being the most important mining counties in the state. Magnetic iron ore of excellent quality is found in immense amounts. The wild mountain region is a favorite resort for hunting and fishing. So abundant were salmon at about 1830 that 100 barrels were annually taken in the county, but at the present time salmon have almost entirely disappeared from the streams.

CLIMATE AND RAINFALL

Climatological records for Clinton County are taken from the Chazy station, which has an elevation of 200 feet. The present observer is W. R. North.

The average dates for the last killing frost in spring and the first in fall are May 14 and October 4, respectively, giving a growing season of 143 days.

The following table covers the period from 1903 to 1918, average temperature records beginning in 1900:

RECORDS OF TEMPERATURE AND PRECIPITATION AT CHAZY

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	16.5	58	1906	—35	1918	1.32	1.20	1918	10.7
February	15.0	53	1903	—28	1908	1.26	1.50	1912	10.5
March	28.2	72	1905	—25	1912	1.47	1.00	1912	9.3
April	43.2	87	1915	3	1911	1.16	1.00	1909*	2.9
May	55.5	94	1911	21	1903	2.45	1.80	1908	T.
June	63.8	96	1907	32	1918	2.89	2.17	1903	......
July	69.9	104	1911	20	1908	3.60	2.60	1912	......
August	57.0	94	1917*	37	1909	3.04	1.85	1908	......
September	59.3	94	1915	24	1914	3.38	2.45	1907	......
October	48.9	80	1909	16	1905	2.61	2.60	1904	0.2
November	34.8	70	1915	—5	1917	1.48	1.18	1918	4.3
December	20.9	63	1912	—30	1917	1.29	1.20	1917	11.2
Year	42.8	104	1911	—35	1918	25.95	2.60	1912*	39.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is generally hilly and broken, in some places mountainous, with a range in elevation of more than 3,700 feet. The Ausable range extends in spurs and broken ranges over more than one-half of the western part of the county. The highest peaks along the western border, the highest of which is Lyon Mountain (3,800 feet), offer wild and picturesque scenery in abundance.

The uplands descend toward the north, expanding into a wide tract of nearly level land along the northern part of the county. Along Lake Champlain, which lies 101 feet above the sea, the surface is level or moderately hilly. From this section it rises gradually but unevenly to the summits of the ridges in the interior. A part of the western portion of the county is covered by the original forests and is too rough to admit of profitable cultivation.

The streams flow in a general easterly direction into Lake Champlain. The northern part of the county is drained by the Big Chazy River as well as by the English and the Little Chazy rivers. The Saranac River, which is the largest stream in the county, follows a northeasterly course through the south central section. The southern and southeastern parts are drained by the Salmon, Ausable, and Little Ausable rivers. The western slope of Lyon Mountain is drained into Upper Chateaugay Lake and from thence into the St. Lawrence. These streams provide abundant power for the numerous grist and pulp mills of the county. On the Saranac and Ausable rivers in particular, large quantities of pulp wood are floated down to the mills from the forests along their banks. On all the larger streams are numerous falls, the Saranac High Falls being especially noted for their scenic beauty. In the western wilderness are numerous small lakes.

In the southern part of the county is the famous Ausable Chasm, which is nearly two miles long, with high, rocky cliffs on either side of the stream and exhibiting many interesting geological features. In a narrow belt along Lake Champlain the soil is clayey, adapted to the growing of small grains and hay; in the interior it is a sandy loam adapted to pasturage and fruit growing; further back, in the foothills of the mountains, potato growing is an important industry.

DESCRIPTION BY TOWNSHIPS

ALTONA: Surface, a rolling upland with a slight inclination toward the northeast. The western half is underlaid by Potsdam sandstone and hundreds of acres are covered with the naked rock. The Big and Little Chazy rivers are the principal streams. The soil is light and sandy and a large share is unfit for cultivation. A few settlements are scattered through the town, and the people are largely engaged in lumbering.

Products: Market milk, potatoes, oats, corn, hay, and buck wheat.

Average values of farm land range from $20 to $50 an acre.

AUSABLE: Surface, nearly level in the east, rolling in the center, and hilly in the west. The highest summits are 500 to 1,000 feet above the lake. Soil, generally a light, sandy loam, moderately fertile in the east and center, but poor in the west. Birmingham Falls at Ausable Chasm is located in this town, and in Chesterfield, Essex County. Iron ore is abundant.

Products: Dairy products, potatoes, beans, hay, corn and other grains, and apples.

Average values of farm land range from $30 to $60 an acre.

BEEKMANTOWN: Surface, level in the east and moderately hilly in the west. Its streams are small creeks and brooks. Soil, a clay loam in the center and east and light sand in the west.

Products: Dairy products, potatoes, hay, oats, apples, buckwheat, strawberries, and vegetables.

Average values of farm land range from $40 to $60 an acre.

BLACK BROOK: The surface is a rocky and mountainous upland, the highest summits being 2,000 to 3,000 feet above the lake. Among the mountains are several nearly level tablelands 200 to 300 feet above the general level. The forest trees are thinly scattered and nearly the whole town is too rough and poor for profitable cultivation. In the mountainous region are several small lakes or ponds. The soil is cold, wet, and generally unproductive. Extensive beds of iron ore are scattered through the town.

The manufacture of iron and charcoal were formerly the principal industries and were continued to some extent until about 1890. The lumber and pulp wood business is most prominent at the present time.

Products: Potatoes, grain, hay, and dairy products.

Average values of farm land range from $10 to $40 an acre.

CHAMPLAIN: The surface is generally level, with a gentle slope toward the lake. The Great Chazy or Champlain River flows in a tortuous course through the town and discharges its waters into Kings Bay. It is navigable to near Champlain village. The soil is a clay or clayey loam. Peat is found in numerous localities.

Products: Market milk, hay, oats, corn, beans, peas, potatoes, and buckwheat.

Average values of farm land range from $50 to $80 an acre.

CHAZY: The surface is rolling with a gentle inclination toward the east. Little Chazy River is the principal stream. The soil is clayey and productive in the central and eastern parts, but sandy in the west. On Hearts' Delight farm a large number of sheep are kept and considerable wool is produced.

There are in this town several herds of pure-bred cattle, including Ayrshires, Guernseys, and Holsteins. The town has an excellent school known as the Chazy Central Rural School.

Products: Hay, oats, corn, apples, potatoes, barley, and buckwheat.

Average values of farm land range from $40 to $80 an acre.

CLINTON: The surface is generally level, with a gentle inclination toward the northwest. The highest points along its southern border are about 1,200 feet above Lake Champlain, which is 97 feet above sea level. A portion of the surface is undulating. It is nearly all underlaid by Potsdam sandstone, which is here remarkably white. Much of the town is a wilderness. The soil is a light, sandy loam, supporting but a thin growth of forest trees.

Products: Market milk, potatoes, grains, and clover.

Average values of farm land range from $25 to $65 an acre.

DANNEMORA: The surface is mostly a wild, mountainous upland covered with a sandy soil and a light growth of forest trees. Chazy Lake, which is three and one-half miles long and one and one-fourth miles wide, discharges its waters northeast through Chazy River; and Upper Chateaugay Lake, which is five miles

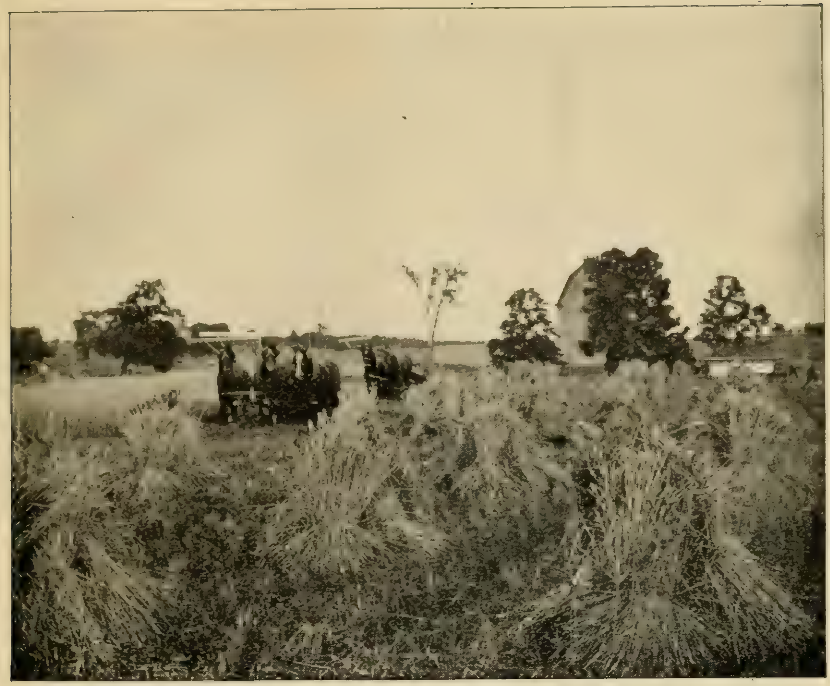


FIG. 49.—HARVESTING WHEAT ON HEART'S DELIGHT FARM, CLINTON COUNTY

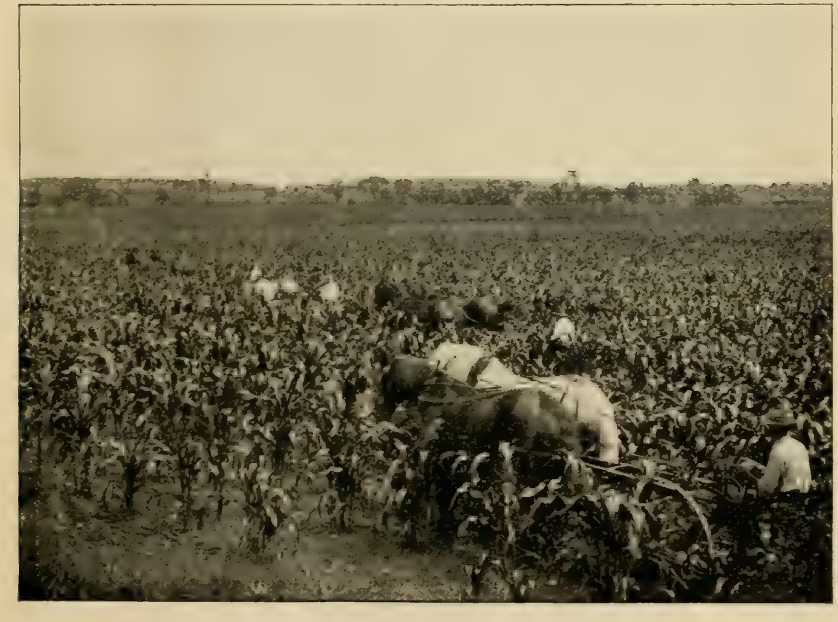


FIG. 50.—A CORN CROP IN CLINTON COUNTY

long and one and one-half miles broad, discharges its waters northwest through Chateaugay River. Large deposits of iron ore are found in the town. At Dannemora village is located Clinton Prison.

Products: Potatoes, grain, and hay.

Average values of farm land range from $10 to $40 an acre.

ELLENBURG: The surface is an upland, mountainous in the south and rolling in the north, with an inclination toward the northeast. Ellenburg Mountain in the southern part is 2,654 feet in height. The soil is generally sandy, but in many places the sand is covered with a rich vegetable mold. Lumbering is extensively carried on.

Products: Dairy products, potatoes, corn, hay, oats, barley, wheat, and buckwheat.

Average values of farm land range from $25 to $50 an acre.

MOOERS: The surface is generally level, with a gentle inclination toward the northeast. The north branch of Big Chazy and English rivers are the principal streams. It is entirely underlaid by Potsdam sandstone and is covered with a light, sandy soil. Along the northern border are several small swamps.

Products: Market milk and hay.

Average values of farm land range from $30 to $60 an acre.

PERU: The surface is rolling in the center and east and slightly inclined toward the lake. In the west it is broken and mountainous. Along the course of the Ausable, in the southeastern part, are extensive swamps. A strip of land two miles wide extending along the lake has a soil composed of clay and clayey loam. West of this is a plain four miles wide covered with sand and interspersed with swamps. In the west the soil is a light, sandy loam. Lumbering interests are very important in this town.

Products: Dairy products, potatoes, apples, beans, corn, and other grains.

Average values of farm land range from $40 to $80 an acre.

PLATTSBURGH: The surface is level in the east and broken and hilly in the west. It is slightly inclined to the east, its western border being elevated about 500 feet above the lake. The Saranac

River is the largest stream. In the east is a clay loam; in the center a sandy loam, and in the west a light sand.

Products: Dairy products, potatoes, hay, oats, buckwheat, apples, strawberries, and vegetables.

Average values of farm land range from $40 to $60 an acre.

SARANAC: The surface is a broken and mountainous upland. Lyon Mountain along the northern border is 3,800 feet above tide. Along the course of the Saranac River are several falls furnishing an immense amount of water power. The High Falls afford some beautiful scenery. The eastern part sloping toward the river is covered with a light sandy soil, and the river intervale with a sandy loam and alluvium. The soil among the mountains is sandy, but the whole western region is too rough for cultivation. Special attention is given to the production of seed potatoes for Long Island growers.

Products: Dairy products, potatoes, corn, grain, and hay.

Average values of farm land range from $40 to $60 an acre.

SCHUYLER FALLS: The surface is rolling in the east and hilly in the west with an inclination toward the east. The soil is a light, sandy loam.

Products: Dairy products, hay, oats, potatoes, apples, buckwheat, strawberries, and vegetables.

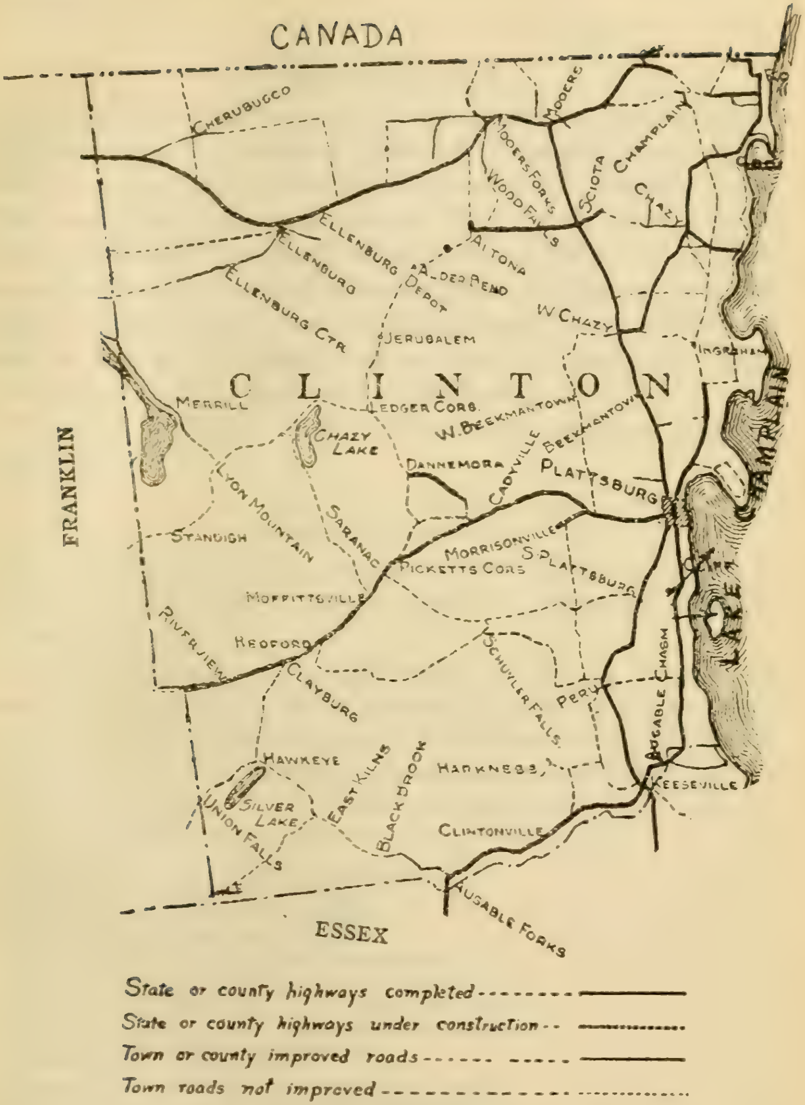
Average values of farm land range from $30 to $60 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The main line of the Delaware and Hudson between Albany and Montreal extends through the east side of the county. From this line three branches traverse different parts of the county as follows: From West Chazy Junction northwest into Canada; from Bluff Point west across the county and south to Lake Placid; from South Junction southwest to Ausable Forks. The Keeseville, Ausable Chasm and Lake Champlain railroad extends from Port Kent west to Keeseville. The northern towns are reached by the Rutland railroad, which extends east to Vermont and west to Ogdensburg, connecting with the Delaware and Hudson at


CANADA
FRANKLIN
ESSEX
CLINTON
LAKE CHAMPLAIN
Cherubusco
Mooers
Champlain
Mooers Forks
Wood Falls
Sciota
Chazy
Ellenburg
Ellenburg
Ellenburg Ctr
Altona
Alder Bend
Depot
W Chazy
Jerusalem
Ingraham
Merrill
Ledger Cors.
W. Beekmantown
Beekmantown
Chazy Lake
Cadyville
Dannemora
Plattsburg
Lyon Mountain
Saranac
Morrisonville
Standish
Picketts Cors
S. Plattsburg
Cliff
Moffittsville
Redford
Riverview
Schuyler Falls
Clayburg
Peru
Ausable Chasm
Hawkeye
East Kilns
Black Brook
Harkness
Silver Lake
Union Falls
Clintonville
Keeseville
Ausable Forks
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Mooers Junction and Rouses Point, and with the New York Central at Malone. An electric line runs from Plattsburgh south to Bluff Point.

Improved Highways

An improved highway enters Clinton County at Ausable Forks and runs along the southern border to Keeseville, from which place two roads take a northerly direction to Plattsburgh. From this point a road continues north to West Chazy where it again divides, following the general direction of the Delaware and Hudson railroad and extending to Rouses Point and Mooers, at which points it connects with a road extending across the northern towns near the line of the Rutland road and west to Chateaugay. From Plattsburgh a road extends west to Moffitsville.

There are in Clinton county 157 miles of completed improved highways.

AVAILABLE MARKETS

Plattsburgh, the principal market, is well known as the seat of a United States military post. It has a considerable trade in lumber and iron.

There are several milk establishments in Clinton County and more than one-half the milk collected is sold as market milk and cream. About 850,000 pounds of creamery butter and nearly 1,000,000 pounds of American cheese are manufactured, besides a considerable quantity of condensed and evaporated milk.

The agriculture organizations are as follows:

Churubusco Potato Growers' Association.
Clinton County Agricultural Society.
Clinton County Breeders' Association.
Clinton County Dairymen's League.
Clinton County Farm Bureau Association.
Clinton County National Farm Loan Association.
Franklin County National Farm Loan Association.
Granges: Pomona and twelve subordinate granges.
Maple Grove Creamery Association.
Saranac Valley Creamery Co.
Saranac Valley Seed Potato Growers' Association.
Schuyler Falls Grange Cooperative Association.
Silver Springs Creamery Co.
South Ellenburg Creamery Association.
Star Creamery Association.
West Beekmantown Creamery Association.
Willow Beach Cooperative Creamery Association.

EDUCATIONAL FACILITIES

A state normal school is located at Plattsburg. Approved courses in agriculture and homemaking are given in a school at Chazy. The schools registered with the regents as having facilities suitable for maintaining high school and academic courses are located at Champlain, Chazy, Dannemora, Ellenburg, Lyon Mountain, Mooers, Morrisonville, Peru, Plattsburgh, Rouses Point, and West Chazy.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	450,324
Number of farms	3,608
Per cent of farm land improved	46.1

LIVE STOCK PRODUCTS

Milk sold	6,189,849 gal.
Cream sold	63,981 gal.
Butter fat sold	468,522 lbs.
Butter produced	406,131 lbs.
Cheese produced	50 lbs.
Eggs produced	551,380 doz.
Wool produced	7,341 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	10,415
Cattle	40,392
Sheep	11,069
Swine	11,563
Poultry	98,617

BEES

Number of colonies	1,829

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	4,923	154,628
Oats	26,380	649,439
Wheat	84	1,513
Barley	1,517	32,853
Buckwheat	5,470	102,833
Rye	286	3,232

	Acres	Tons
Hay and forage	91,171	103,362

Special Crops:	Acres	Yield
Potatoes	8,673	1,325,041 bu.
Vegetables, other than potatoes	1,059	....
Dry edible beans	355	4,352 bu.
Dry peas	58	813 bu.

Fruits:		
Apples	147,313 trees	73,691 bu.
Peaches and nectarines	82 trees	21 bu.
Pears	3,548 trees	1,880 bu.
Plums and prunes	5,111 trees	84 bu.
Cherries	3,810 trees	140 bu.
Grapes	770 vines	12,923 lbs.
Small fruits	21 acres	30,947 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,474	3,110

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	10,555	9,426
Cattle	46,030	40,948
Sheep	8,179	8,453
Swine	7,834	9,065
Poultry	110,312	64,310

BEES

	1917 Number	1918 Number
Number of colonies	1,283	1,217

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	4,896	3,321	72,739
Oats	24,886	17,481	425,587
Barley	1,599	1,572	27,801
Buckwheat	4,587	4,973	45,169
Wheat (winter)	128	83	1,021
Wheat (spring)	965	1,553	19,436
Rye	569	234	3,718

	1917	1918	
Hay and forage:	Acres	Acres	Tons
Alfalfa	1,008	869	3,202
Other hay	78,714	71,377	106,442
Corn (ensilage)	6,317	4,482	31,374
Corn (fodder)	....	2,209	....

	1917	1918	
	Acres	Acres	Yield
Special crops:			
Beans	2,637	4,433	27,231 bu.
Cabbage	228	102	816 tons
Potatoes	9,050	11,149	1,060,957 bu.
Rooots raised for stock food	....	453	....
Canning factory crops	19	168	....
Other vegetables and garden crops	674	727	....
Fruits:			
Apples	4,093	5,158	93,627 bu.
Pears	22	22	803 bu.
Plums	59	51	20,169 lbs.
Cherries	55	26	4,317 lbs.
Vineyard	....	3	984 lbs.
Small fruits	97	57	....

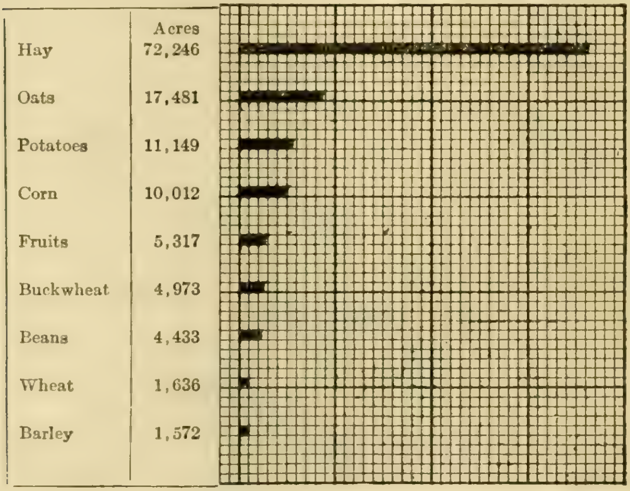
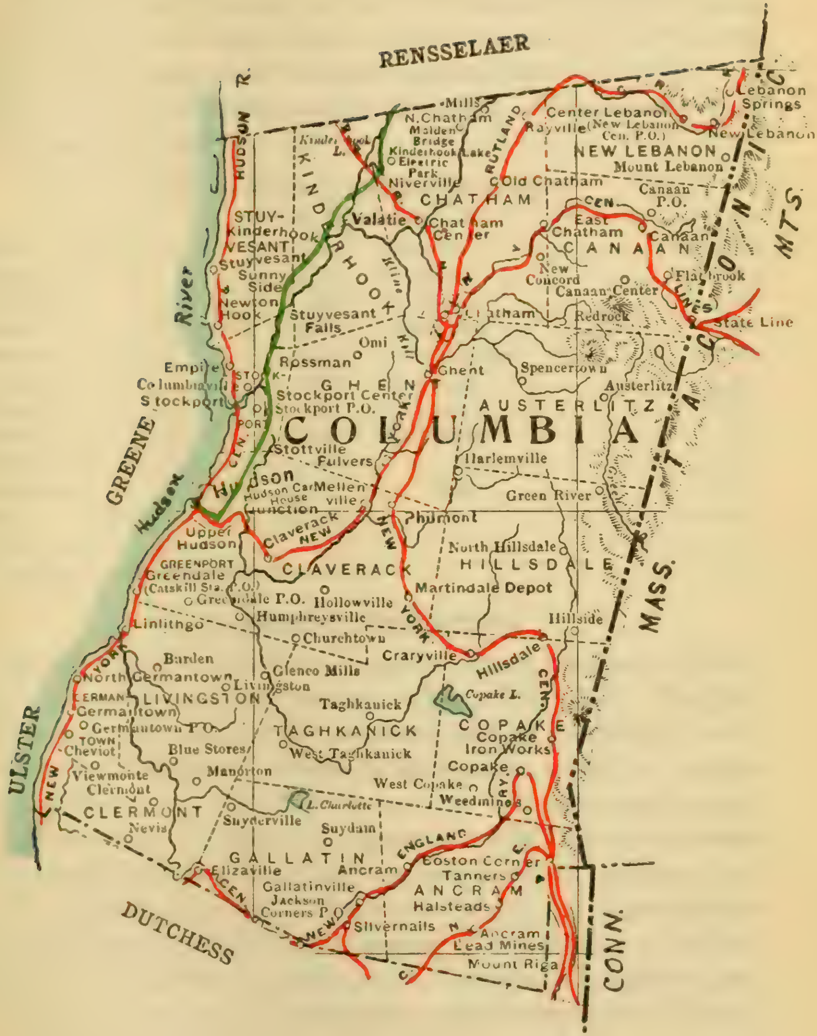


FIG. 51.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN CLINTON COUNTY


RENSSELAER
Hudson R.
Hudson River
GREENE
ULSTER
DUTCHESS
CONN.
MASS.
TACONIC MTS
COLUMBIA
KINDERHOOK
STUYVESANT
CHATHAM
NEW LEBANON
CANAAN
GHENT
STOCKPORT
AUSTERLITZ
HUDSON
CLAVERACK
HILLSDALE
GREENPORT
LIVINGSTON
GERMANTOWN
TAGHKANICK
COPAKE
CLERMONT
GALLATIN
ANCRAM
Lebanon Springs
New Lebanon
Center Lebanon
Rayville (New Lebanon Cen. P.O.)
Mount Lebanon
Canaan P.O.
Canaan
Flatbrook
State Line
Mills
N. Chatham
Malden Bridge
Kinderhook Lake
Electric Park
Niverville
Old Chatham
East Chatham
New Concord
Canaan Center
Redrock
Chatham
Kinderhook L.
Valatie
Chatham Center
Kinderhook
Stuyvesant
Sunny Side
Newton Hook
Stuyvesant Falls
Omi
Rossman
Ghent
Spencertown
Austerlitz
Empire
Columbiaville
Stockport
Stockport Center
Stockport P.O.
Stottville
Fullers
Harlemville
Green River
Hudson
Hudson House
Car Mellenville
Junction
Philmont
Upper Hudson
Greendale (Catskill Sta. P.O.)
Greendale P.O.
Hollowville
Humphreysville
North Hillsdale
Martindale Depot
Hillside
Linlithgo
Churchtown
Craryville
Barden
North Germantown
Glenco Mills
Livingston
Copake L.
Germantown
Germantown P.O.
Taghkanick
Cheviot
Blue Stores
West Taghkanick
Copake Iron Works
Viewmonte
Clermont
Manorton
Copake
West Copake
L. Charlotte
Weedmines
Nevis
Snyderville
Suydam
Elizaville
Ancram
Boston Corner
Tanners
Gallatinville
Jackson Corners P.O.
Halsteads
Silvernails
Ancram Lead Mines
Mount Riga
Rutland
Cen.
N. Y. Cen.
New York
New England
Harlem
Claverack

Map of Columbia County, Showing Townships
Red, railroads; green, electric roads

COLUMBIA COUNTY

This county lies in the southeastern part of the state, on the east bank of the Hudson, the state of Massachusetts forming a great part of its eastern border. It has an area of 412,160 acres, and extends from north to south approximately 34 miles, and from east to west approximately 19 miles. The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Hudson (city)*	11,544	Greenport	1,470
Ancram	1,110	Hillsdale	1,313
Austerlitz	889	Kinderhook	3,346
Canaan	1,057	Livingston	1,522
Chatham	3,301	New Lebanon	1,369
Claverack	4,403	Stockport	2,313
Clermont	881	Stuyvesant	1,841
Copake	1,368	Taghkanic	741
Gallatin	780		
Germantown	1,745	Total	44,111
Ghent	3,118		

---

* Hudson is the county seat.

HISTORICAL ASSOCIATIONS

The land now included in Columbia County originally formed a part of Albany County and was taken off in 1786. The first settlements were made in the northern part of the county under the Dutch government. Dutch families later settled in various parts of the county and their names are still prominent among their descendants. Many of the names given by them to the towns and natural features of the county are also retained. Among them is Kinderhook, signifying "Children's Point." It is stated that the name was given by Hudson because of the number of Indian children congregated at a point above Stuyvesant Landing to see his vessel. This town is celebrated as the birthplace of Martin Van Buren, formerly President of the United States. Another name bestowed by these people is that of the town of Claverack or "Clover Reach," from the large clover fields abounding there at the time of the early settlements.

In the eastern part of the county the first settlements were made about 1745 to 1750 by families from Connecticut, who settled without first acquiring titles. This naturally led to many disputes concerning ownership of lands, which were not settled until some time after the Revolution.

The patent of Livingston Manor, including nearly all of the seven southern towns and comprising 160,000 acres, was conferred upon Robert Livingston in 1686. The territory of Massachusetts, under its charter, extended west to the Pacific Ocean, and grants were made by that colony covering portions of this territory. These claims also raised bitter contentions which continued until after the Revolution.

A settlement was made by German Palatines in 1710 on a tract of 6,000 acres — now constituting the principal part of the town of Germantown, which was sold back to the government by Robert Livingston. These settlements were collectively known as the "East Camp," to distinguish them from another settlement of Palatines on the west side of the river. It was the intention of the English Government that these people should manufacture quantities of tar and other naval stores, besides serving as a barrier against the northern Indians. The colonists were dissatisfied, however, and in 1713 many of them left for Schoharie, the land that they claimed had been promised to them.

About 1760, emigrants from Massachusetts and Connecticut formed a settlement in the town of New Lebanon, which later became the largest Shaker establishment in the state. They were principally engaged in farming and in cultivating medical plants and garden seeds.

The anti-rent difficulties arose to such a pitch concerning Livingston Manor and other districts held in leasehold that in 1844 the governor ordered out seven companies of militia to assist the sheriff of this county in the discharge of his duties.

The residence of Robert Livingston was in the town of Clermont, from whence was derived the name of the first steamboat to sail on the Hudson. It was from Livingston that Robert Fulton received much advice and financial assistance in executing his plan of steam navigation. Livingston also introduced Merino sheep into this state, as well as the use of gypsum.

The city of Hudson was founded after the Revolution (1783) by enterprising men of property from Rhode Island, in all about thirty persons. Twenty of this company sailed up the Hudson to find some favorable locality in which to settle. At the time they purchased the site of the present city it was occupied as a farm, with a single storehouse on the bank of the river. They were soon followed by other emigrants from the east and two years later it was incorporated as a city with a population of nearly 1,500. About twenty-five vessels were owned in the place at that time and these were mostly employed in the West India trade. A large business in whaling and seal fishing was also followed for some years by vessels from this place.

During the difficulties and impressment of seamen previous to the War of 1812 the shipping business of Hudson received a severe blow, but later on the whale fishing once more became profitable.

The completion of a railroad from this city to Boston some years later marked the beginning of a new era.

DEVELOPMENT OF INDUSTRY

Columbia County being favorably located on the river, hay was extensively produced and shipped at an early date. Large quantities of paper and medicinal extracts were also shipped, the county excelling in the production of both commodities at about 1860. Fifty years ago Columbia County was one of the largest potato producing counties in the state. The land is now largely given over to the fruit industry. Fruit raising has developed to a large extent in the western part, along the entire length of the county and extending about eight miles back from the Hudson. This industry has increased very rapidly during recent years, especially in the town of Kinderhook. In the growing of apples, according to the 1918 census, Columbia far outranks the other counties of the state. The shipping companies, as well as the railroads along the river, are adopting the practice of sending trucks to Kinderhook for the fruit, which may be collected one afternoon and put on the New York market the following morning. Kinderhook is also prominent in dairying, which is the predominating industry throughout the part of the county lying back of the fruit belt. General agriculture is extensively followed throughout the entire county, which stands second only to Rensselaer in the production of rye.

The manufacture of paper, cotton and woolen fabrics, vegetables, extracts, and iron is largely carried on. The largest knitting mills are located at Stockport, Kinderhook, Philmont, and Hudson, while the woolen mills are located at Stockport. Stockport is also the seat of a wrapping paper manufacturing industry, as are also Chatham, East Chatham, Valatie, Malden, Mellenville, and Malden Bridge.

CLIMATE AND RAINFALL

In Columbia County the meteorological station is located at Chatham, at an elevation of 470 feet. The present observer is M. R. Tank.

The average dates for the last killing frost in spring and the first in fall are May 11 and October 2, respectively, giving a growing season of 144 days.

The following table covers records extending from 1904 to 1918:

RECORDS OF TEMPERATURE AND PRECIPITATION AT CHATHAM

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	23.5	65	1916*	—18	1909	2.50	1.20	1905	9.8
February	21.6	57	1918	—19	1918	2.70	1.93	1906	12.9
March	33.6	81	1907*	—9	1916	2.99	1.48	1916	11.2
April	46.2	90	1915	16	1911	4.10	1.48	1914	3.3
May	57.4	96	1911	24	1907	3.31	2.26	1918	T.
June	64.8	95	1908	34	1913	4.34	2.44	1909	......
July	71.3	103	1911	42	1912	3.95	2.85	1915	......
August	68.4	100	1918*	38	1912	4.31	2.71	1911	......
September	61.7	95	1914	20	1914	3.67	2.55	1916	......
October	51.2	85	1905	20	1904	3.62	2.77	1907	T.
November	38.0	71	1909	*8	1917	2.16	1.20	1907	3.3
December	26.4	64	1914*	—20	1917	2.93	2.05	1907	10.7
Year	47.0	103	1911	—20	1917	40.58	2.85	1915	51.2

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is diversified. The Taconic Mountains extend along the eastern border and the adjoining parts of the county are broken by numerous irregular ranges of hills. The western part of the county is an undulating plateau, which extends to the river and generally terminates either in bold shores or bluffs. The principal streams are Kinderhook and Claverack creeks, which unite and pour into the Hudson through Stockport Creek. A number of small lakes and ponds lie in the eastern and southeastern portions. The prevailing rocks are the Hudson River shales, with outcroppings of slate rocks and limestone.

DESCRIPTION BY TOWNSHIPS

ANCRAM: The surface is broken and hilly. In the eastern part the hills range in a north and south direction; elsewhere they are irregular. The hills in the northwest are high, but rise with a very gradual slope. Along the course of the two principal streams in the north center of the town the land is flat, low, and swampy, extending over a region of several hundred acres. The principal streams are Roeliff Jansen Kill and Punch Brook. A narrow intervale bordered by steep, irregular hills extends along the course of the former. The soil is generally a gravelly loam intermixed with clay. In the east and southeast there is considerable limestone soil and in the intervale bordering the stream are quantities of alluvial deposits. The soil is productive and fertile and generally easily tilled. Some of the land is particularly adapted to grazing purposes.

Products: Milk, hay, buckwheat, potatoes, rye, and oats.

Average values of farm land range from $5 to $100 an acre.

AUSTERLITZ: The surface is hilly and broken. Along the east side of the town the Taconic Mountains rise in a series of high, rounded peaks. At their foot on the east lies the valley of the Green River. Further west the surface rises in a series of irregular hills. The western part of the town is undulating. Most of the hills are arable to their summits, but in the north center they are rocky, barren, and sterile. The soil is generally a slaty or gravelly loam of varying fertility. Stock raising and dairying are carried on to a considerable extent.

Products: Milk, hay, buckwheat, rye, and potatoes.

Average values of farm land range from $5 to $100 an acre.

CANAAN: The surface is broken and hilly. In the northeastern part of the town lies Queechy Lake, which is about three miles in circumference. Numerous springs and brooks are in the town, affording good drainage. The soil is a gravelly or slaty loam and clay. In the valleys it is generally fertile and produces large crops of grass and cereals. Most of the hills are arable to their summits. Magnesium limestone abounds.

Products: Milk, hay, buckwheat, potatoes, rye, and oats.

Average values of farm land range from $15 to $40 an acre.

CHATHAM: The surface is moderately hilly, the ranges generally extending north and south. The principal stream is Kinderhook Creek, on which are numerous mill sites. Kinderhook Lake extends into the northwestern part of the town. Nearly the entire surface is tillable and there is but little waste land in the town. The town is well drained by numerous brooks and creeks. The soil is a loam or a mixture of loam and clay or gravel. The alluvial flats along Kinderhook Creek are extremely fertile.

Products: Milk, sheep, hay, rye, oats, buckwheat, potatoes, and fruit.

Average values of farm land range from $15 to $50 an acre.

CLAVERACK: The surface is undulating in the west and hilly in the east. The principal streams are Claverack Creek and its tributaries. Along its banks are alluvial flats easily cultivated and of great fertility. The soil on the uplands is not very fertile, but with skillful cultivation yields rich returns. In the eastern part of the town it is somewhat clayey and is best adapted for grass; in other parts it varies from a rich loam to a gravelly loam intermixed with slate and produces the common cereals and the hardier fruits in abundance.

Products: Hay, milk, fruits, rye, corn, oats, and buckwheat,

Average values of farm land range from $50 to 125 an acre.

CLERMONT: The surface is elevated and undulating. In general, all of the land is susceptible of cultivation, although there are some outcropping ledges, as well as some small swamps. Small brooks afford good drainage. The soil is a fertile loam and in some places sandy. The hardier fruits are produced abundantly.

Products: Fruit, hay, rye, oats, buckwheat, and corn.

Average values of farm land range from $25 to $100 an acre.

COPAKE: The surface is broken by ranges of high hills, separated by valleys of varying width, the Taconic range rising on the eastern border. In the town are several small lakes, the largest of which is Copake Lake in the western part. The principal streams are Roeliff Jansen Kill and Bashbish Creek. The soil is generally a gravelly and clayey loam; on the hills it is of a slaty character and in the valleys the alluvial deposits have formed a deep, rich soil.

Products: Milk, hay, rye, oats, and buckwheat.

Average values of farm land range from $10 to $50 an acre.

GALLATIN: The surface is broken by several ranges of hills extending in a north and south direction. Roeliff Jansen Kill is the principal stream. Its banks are steep and in some places rocky. It affords several good mill sites. Charlotte Lake in the northern part of the town is surrounded by gentle slopes generally cultivated to the water's edge. The soil is generally a slaty or gravelly loam, moderately fertile. In the valleys the land is a good quality for agriculture, and the hills in the southern and eastern parts are fertile and productive.

Products: Milk, hay, buckwheat, potatoes, rye, and oats.

Average values of farm land range from $10 to $50 an acre.

GHENT: The surface is hilly in the east and undulating in the west with an upland of level land intervening. The town is watered by the Kline Kill and North Creek. The soil is generally a gravelly loam, except in the western part, where it is clay. In the valleys is some alluvial land.

Products: Hay, rye, milk, fruit, corn, potatoes, oats, and buckwheat.

Average values of farm land range from $25 to $75 an acre.

GREENPORT: The surface is broken and hilly. Below the city of Hudson on the river is a range of hills commencing with the bold elevation of Mt. Merino, which is 540 feet above the river. Claverack Creek, forming the eastern boundary, drains a considerable portion of the town. The portion of the town north of Hudson is only slightly hilly. The southern part of the town is a broad, fertile valley drained by Kahseway Creek. The soil is clayey along the river and sandy and gravelly loam in the interior.

Products: Hay, milk, fruit, rye, oats, potatoes, and corn.

Average values of farm land range from $50 to $100 an acre.

GERMANTOWN: The surface is gently undulating, consisting of ranges of hills separated by intervening valleys. Roeliff Jansen Kill forms the northeastern boundary. The soil is a rich, fertile loam, sandy in a few places.

Products: Fruit, hay, oats, rye, and milk.

Average values of farm land range from $75 to $100 an acre.

HILLSDALE: The surface is broken by ranges of high hills, extending in a north and south direction and separated by narrow valleys. Several small streams, forming the headwaters of the Roeliff Jansen Kill and Taghkanic Creek, take their rise in this town. In the west a valley extends nearly halfway across the town, and along the southern line a valley of varying width extends into the larger valley at Hillsdale village. The hills are generally rounded in form and are arable to their summits, although a few of them are steep and rocky. The soil is generally productive and composed of a variety of compositions of slate, gravel, clay, limestone, and loam.

Products: Milk, hay, buckwheat, potatoes, rye, and oats.

Average values of farm land range from $10 to $50 an acre.

KINDERHOOK: The surface is level or undulating. In the eastern part are moderate spurs of the Peterboro Mountains, which, however, permit the greater portion to be cultivated.

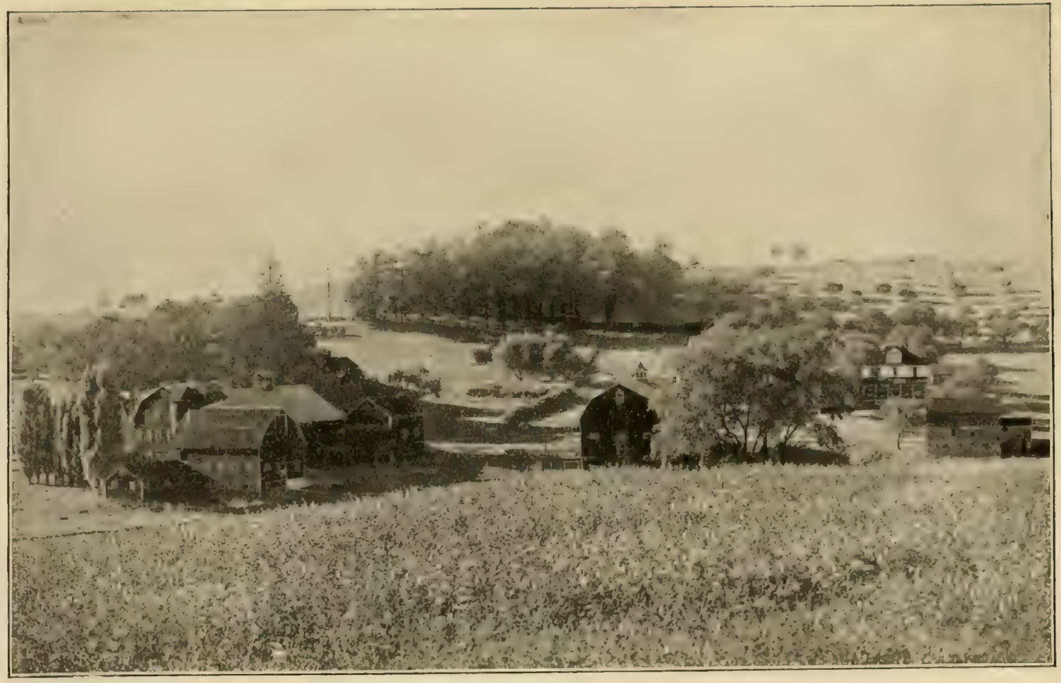


Fig. 52.— Farm View in Town of Chatham, Columbia County

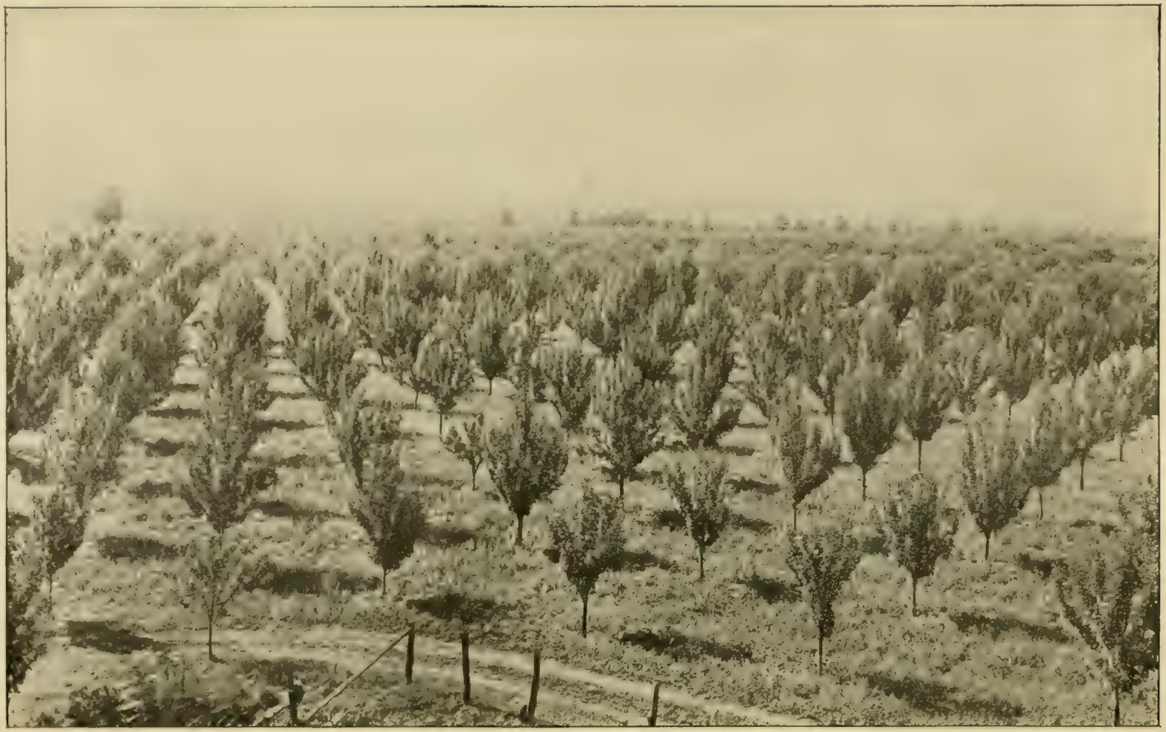


Fig. 53.— Birdseye View of Young Kieffer Pear Orchard on Farm of L. L. Morrell, Kinderhook

Along Kinderhook Creek are level flats of great fertility. Kinderhook Lake, in the northeastern part, is about four miles in circumference. Valatie River flows through the northeast from Kinderhook Lake and in the latter part of its course furnishes several mill sites. The soil varies from a reddish sand to a heavy clay interspersed with loam or gravelly clay. With the good husbandry and modern methods that are practiced, and the spirit of co-operation that prevails, the agriculture of this town is very progressive, and many highly improved farms are in evidence. Grass is a staple product and the common varieties of fruit yield rich returns.

Products: Milk, hogs, fruit, hay, rye, oats, corn, buckwheat, potatoes, and beans.

Average values of farm land range from $50 to $100 an acre.

LIVINGSTON: The surface is somewhat hilly in the west; an undulated plateau occupying the center, and the eastern part broken by hills whose surfaces are generally arable. Taghkanic Creek crosses the northeastern corner and Roeliff Jansen Kill forms the southwestern border. Almost all of the course of this last stream passes through a broad, fertile valley, but near the Hudson its banks are steep and rocky. In the southern part of the town are the Twin ponds. The soil is unusually fertile, varying from a sandy loam to a clay, occasional ledges of limestone or slate rock outcropping.

Products: Fruit, hay, rye, oats, buckwheat, and corn.

Average values of farm land range from $25 to $100 an acre.

NEW LEBANON: The surface contains steep hills separated by broad, irregular valleys. The Taconic range separates this town from Massachusetts. The hills are generally cultivated to their summits and those having a southern exposure are very fertile. The principal stream is Wyomanock Creek, to which a number of brooks are tributary. The soil is a gravelly and slaty loam intermixed with clay. Medicinal herbs and garden seeds are extensively cultivated.

Products: Milk, hay, rye, and oats.

Average values of farm land range from $20 to $50 an acre.

STOCKPORT: The surface consists of a high tableland rising from the river in places and descending with a moderate slope toward the east. Kinderhook and Claverack creeks unite in the center of the town and with their streams furnish considerable water power. The soil is a fertile loam along the Hudson, with slate on the uplands in the central part and clay in the south. The sunny hillsides on the Hudson seem especially adapted for fruit culture and large vineyards abound.

Products: Hay, rye, fruit, milk, oats, and corn.

Average values of farm land range from $40 to $75 an acre.

STUYVESANT: The surface is generally elevated and level, except along the river, where it is broken by ravines and low hills. Along Kinderhook Creek in the southeastern part of the town, the surface is slightly broken by slate ridges. The natural formations along this creek afford excellent mill sites. The soil is generally clay, except along the east line, where it is a light, sandy loam.

Products: Hay, rye, fruit, milk, oats, corn, and potatoes.

Average values of farm land range from $35 to $75 an acre.

TAGHKANIC: The surface is generally hilly, rising in the northern and southern portions to a considerable height, being more broken in the central part. The hills are generally arable to their summits. Many of them are wooded and are too rocky for cultivation. The Taghkanic, or Copake Creek, is the principal stream, the course of which is quite rapid and affords several fine mill sites. The soil is generally a gravelly and slaty loam, quite productive.

Products: Milk, hay, buckwheat, potatoes, oats, and rye.

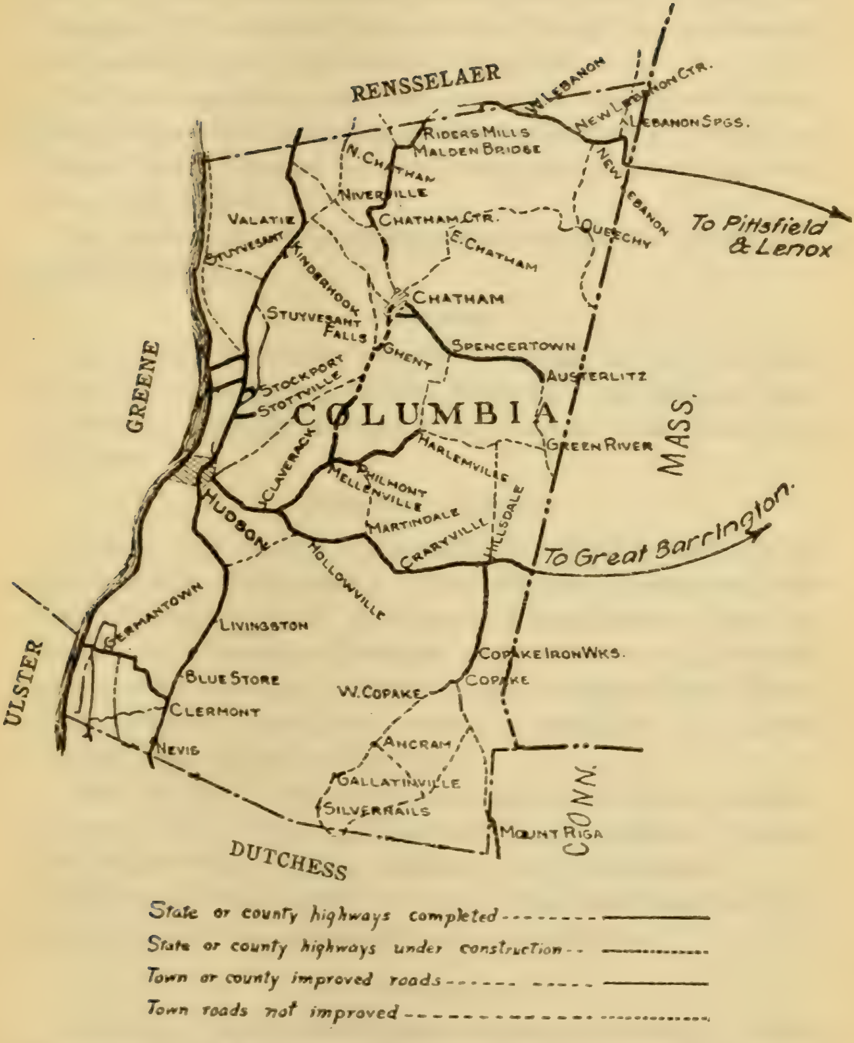
Average values of farm land range from $10 to $50 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The Hudson River division of the New York Central follows the shore of the Hudson along the west side of the county. The New York Central line of the Boston and Albany runs from Hudson through Ghent to Chatham, where it connects with the


RENSSELAER
W. Lebanon
New Lebanon Ctr.
Lebanon Spgs.
New Lebanon
Riders Mills
Malden Bridge
N. Chatham
Niverville
Valatie
Stuyvesant
Chatham Ctr.
E. Chatham
Queechy
To Pittsfield & Lenox
Kinderhook
Chatham
Stuyvesant Falls
Ghent
Spencertown
GREENE
Stockport
Stottville
Austerlitz
COLUMBIA
MASS.
Green River
Harlemville
Claverack
Philmont
Mellenville
Hudson
Martindale
Craryville
Hillsdale
To Great Barrington
Hollowville
Germantown
Livingston
ULSTER
Copake Iron Wks.
Blue Store
Copake
W. Copake
Clermont
Nevis
Ancram
Gallatinville
Silvernails
CONN.
Mount Riga
DUTCHESS
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

main line of the Boston and Albany from Albany and continues to Pittsfield in Massachusetts.

The Harlem division of the New York Central extends through the southeastern and central parts of the county to Ghent and Chatham. The Rutland railroad runs through the northeastern and northern parts, terminating at Chatham.

In the southeastern and southern parts, lines of the Central New England form junctions at Silvernails, Boston Corners, and Mount Riga. Through the two latter places passes a line of the New York Central.

An electric road from Albany runs through the northwestern part to Hudson.

Waterways

In common with other counties bordering the lower Hudson, there are several lines of Hudson River boats and produce barges conducting a freight and passenger business from docks along the river.

Improved Highways

A state road between Albany and New York extends through the west side of the county. From Hudson an improved highway runs east to Great Barrington, Massachusetts. From the latter road a branch at Claverack runs northeast to Harlemville and another branch at Hillsdale runs to Copake Iron Works. The northeastern part of the county is crossed by the highway leading from Albany to Pittsfield.

Short sections in various parts of the county are as follows: Between Riders Mills and Chatham Center; between Chatham and Spencertown; between Clermont and Germantown.

There are in the county 96 miles of completed improved highways with 15 miles additional under construction.

AVAILABLE MARKETS

Hudson is the principal market within the county. In this city are two of the largest cement plants in the country. It is also the location of the New York State Training School for Girls.

Rye is milled into flour and exported in all directions. Hay, straw, and fruit are shipped to New York and New England cities.

Excellent markets, which often pay the more favorable prices, are found in Pittsfield, Springfield, and Providence.

Practically all of the milk produced in Columbia County is sold as market milk, which is collected by some of the large milk companies and shipped to New York or shipped direct by the producer to Albany and other neighboring cities. The county has excellent railroad facilities, and the convenience to the New York City market and to the large cities in the New England states is of great advantage in disposing of milk products. Italian and Greek types of cheese are manufactured to a limited extent.

The agricultural organizations in the county are as follows:

Capitol District National Farm Loan Association.
Claverack Cooperative Association.
Columbia County Agricultural Society.
Columbia County Beekeepers' Cooperative Association.
Columbia County Breeders' Association.
Columbia County Dairymen's League.
Columbia County Farm Bureau Association.
Columbia County National Farm Loan Association.
Columbia County Sheep Growers' Association.
First National Farm Loan Association of Nassau.
Germantown Cooperative Association, Inc.
Granges: Pomona and seventeen subordinate granges.
Kinderhook Duroc-Jersey Swine Breeders' Association.
Kinderhook Pomological Association.

EDUCATIONAL FACILITIES

The schools registered with the regents as having facilities suitable for maintaining high school and academic courses are located at Chatham, Hillsdale, Hudson, Kinderhook, New Lebanon, Philmont, and Valatie.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	374,415 acres
Number of farms	2,963
Per cent of farm land improved	78.6

LIVE STOCK PRODUCTS

Milk sold	3,760,114 gal.
Cream sold	21,513 gal.
Butter fat sold	90,011 lbs.
Butter produced	790,296 lbs.
Cheese produced	230 lbs.
Eggs produced	1,002,218 doz.
Wool produced	13,459 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	9, 050
Cattle	24, 400
Sheep	25, 229
Swine	13, 091
Poultry	172, 879

BEES

Number of colonies	2, 055

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	17, 385	410, 576
Oats	21, 369	503, 088
Wheat	112	1, 942
Barley	64	1, 244
Buckwheat	4, 456	81, 073
Rye	18, 280	230, 195

	Acres	Tons
Hay and forage	91, 729	89, 208

Special crops:	Acres	Quantity
Potatoes	3, 144	232, 702 bu.
Vegetables, other than potatoes	1, 291	....
Dry edible beans	15	136 bu.

Fruits:		
Apples	297, 579 trees	892, 590 bu.
Peaches and nectarines	51, 818 trees	8, 411 bu.
Pears	170, 777 trees	121, 691 bu.
Plums and prunes	17, 433 trees	7, 784 bu.
Cherries	78, 526 trees	25, 002 bu.
Quinces	1, 180 trees	278 bu.
Grapes	364, 674 vines	3, 482, 633 lbs.
Small fruits	620 acres	1, 274, 978 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2, 280	2, 378

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	5,053	5,971
Cattle	17,199	21,066
Sheep	11,258	9,473
Swine	6,393	6,716
Poultry	144,638	142,564

BEES

	1917	1918
Number of colonies	1,907	2,082

SELECTED CROPS

		1918	
Cereals:	1917 Acres	Acres	Bushels
Corn	11,605	12,787	243,011
Oats	15,864	14,061	351,926
Barley	298	311	3,139
Buckwheat	3,385	5,434	69,456
Wheat (winter)	347	564	5,500
Wheat (spring)	105	288	3,964
Rye	15,122	14,711	174,075

		1918	
Hay and forage:	1917 Acres	Acres	Yield
Alfalfa	587	552	1,238 tons
Other hay	55,271	65,703	60,547 tons
Corn (ensilage)	3,157	2,756	19,132 tons
Corn (fodder)	....	1,610	....
Special crops:			
Field beans	360	509	3,226 bu.
Cabbage	387	331	952 tons
Potatoes	2,298	2,847	210,199 bu.
Roots raised for stock food	....	734	....
Canning factory crops	63	26	....
Other vegetables and garden crops	558	965	....
Fruits:			
Apples	11,121	12,413	1,114,918 bu.
Peaches	551	609	11,284 bu.
Pears	3,438	3,535	87,178 bu.
Plums	189	118	19,361 lbs.
Cherries	1,008	957	625,193 lbs.
Quinces	....	33	338 bu.
Vineyard	1,166	1,258	2,089,460 lbs.
Small fruits	619	1,157	....

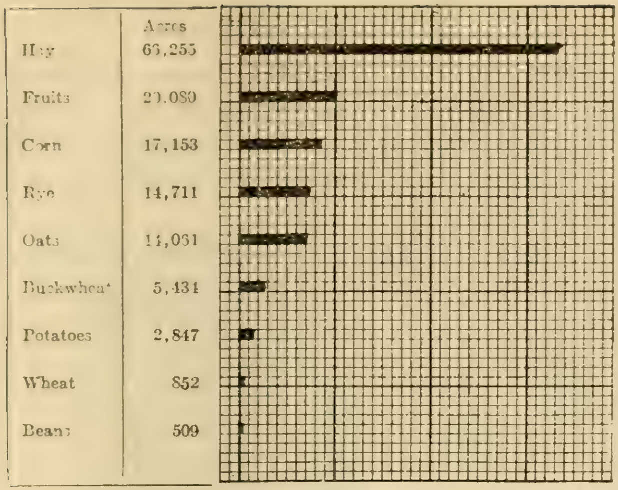


FIG. 54.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN COLUMBIA COUNTY

CORTLAND COUNTY

This county lies in the Allegheny plateau near the center of the state and just south of the watershed between the Susquehanna River and Lake Ontario. It has an area of 321,920 acres. The approximate length from north to south is 26 miles and from east to west 20 miles.

The distribution of population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

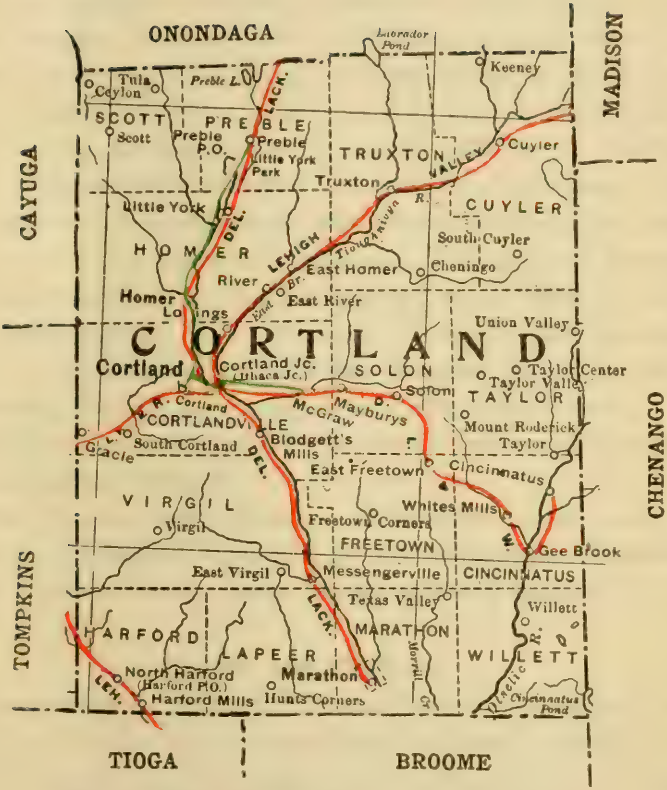
Cortland (city)*	12,367	Scott	683
Cincinnatus	958	Solon	545
Cortlandville	3,266	Taylor	703
Cuyler	945	Truxton	1,089
Freetown	511	Virgil	1,201
Harford	728	Willett	607
Homer	3,745		
Lapeer	465	Total	30,074
Marathon	1,500		
Preble	761		

---

* Cortland is the county seat, and the present population is about 13,000.

HISTORICAL ASSOCIATIONS

This county was organized from Onondaga in 1808 and named in honor of General Pierre Van Cortlandt, the first Lieutenant-Governor of the State of New York, who was an extensive owner of lands on the military tract in this and adjacent counties. As in the neighboring counties, settlement did not begin until after the Revolution. The first settlers located on the present site of Homer in 1791. Virgil and Cortlandville were settled three years later. Being remote from the great routes of travel, settlement advanced but slowly for many years and the more distant valley of the Genesee had been largely taken up by immigrants before civilization became general in Cortland County. Other conditions that had the effect of retarding the early development of the county were the heavy growth of forest trees, together with fear of Indian attacks, which had not entirely subsided. When railroads had been completed through the county a new impulse pervaded every


ONONDAGA
MADISON
CAYUGA
CHENANGO
TOMPKINS
TIOGA
BROOME
CORTLAND
Labrador Pond
Keeney
Tula
Cuylon
Preble L.
SCOTT
Scott
PREBLE
Preble P.O.
Preble
Little York Park
TRUXTON
Truxton
Cuyler
CUYLER
VALLEY
LACK.
DEL.
LEHIGH
Little York
HOMER
Homer
River
East Homer
South Cuyler
Cheningo
East River
East Br.
Lorings
Union Valley
Cortland
Cortland Jc. (Ithaca Jc.)
SOLON
Solon
Taylor Center
Taylor Valley
TAYLOR
R. Cortland
CORTLANDVILLE
McGraw
Mayburys
Mount Roderick
Taylor
South Cortland
Gracie
Blodgett's Mills
East Freetown
Cincinnatus
VIRGIL
Virgil
Whites Mills
Freetown Corners
FREETOWN
Gee Brook
East Virgil
Messengerville
CINCINNATUS
Texas Valley
Willett
HARFORD
MARATHON
LAPEER
WILLETT
North Harford (Harford P.O.)
Harford Mills
Marathon
Hunts Corners
LEH.
Cincinnatus Pond
Pacific

Map of Cortland County, Showing Townships
Red, railroads; green, electric roads

branch of business, and the value of farms was then greatly enhanced because of the easy and direct avenues through which produce might be sent to market.

DEVELOPMENT OF INDUSTRY

Farming in Cortland County was at first of a general nature. Later dairying was found to be profitable, and it soon became the leading industry. At the present time large quantities of milk are shipped to New York, and Holstein cattle raised in Cortland County may be found in every section of the United States. In localities where milk is used in manufacturing dairy products, swine are very generally raised. Within the last few years the canning crop industry has come into prominence and many hundreds of acres are now devoted to the raising of peas, beans, etc., for canning factory purposes. Cabbage and potatoes are important products, as are also hay and grain, which are used in the production of milk. Cortland County is fast becoming famous as a producer of certified seed potatoes, for which there is a growing demand from Long Island and nearby states.

Every farm has a few fruit trees, mainly apple, and there are a few commercial orchards.

Among the important industries of Cortland County may be mentioned three located in the city of Cortland, namely, the manufacture of wire and steel, motor trucks, and wall paper.

CLIMATE AND RAINFALL

The meteorological station in Cortland County is located at Cortland at an elevation of 1,129 feet above sea level. Records are being made under the supervision of the editor of the *Cortland Standard.*

The average dates for the last killing frost in spring and the first in fall are May 14 and September 30, respectively, giving a growing season of 139 days.

The following records cover a period of thirty-eight years.

RECORD OF TEMPERATURE AND PRECIPITATION AT CORTLAND

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	23.1	68	1906	—29	1904	2.70	1.70	1905	12.8
February	21.9	61	1906	—23	1896	2.43	1.28	1914	13.9
March	30.6	80	1905	—12	1916*	2.66	1.66	1901	10.2
April	43.1	92	1902	10	1903	2.87	1.73	1914	1.9
May	54.6	94	1911	23	1907	3.83	2.60	1906	T.
June	63.1	92	1911	31	1902	4.12	2.62	1914	......
July	67.6	101	1911	36	1898	4.52	2.07	1904	......
August	65.4	100	1916	35	1895	3.76	2.02	1903	......
September	58.6	92	1900	26	1913	3.56	1.70	1913	T.
October	47.5	85	1900	18	1896	3.86	5.80	1903	1.3
November	36.5	73	1909	....	1903	3.00	2.25	1900	5.2
December	26.4	65	1912	—15	1914	2.99	3.50	1901	12.0
Year	44.7	101	1911	—29	1904	39.57	5.80	1903	57.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is hilly and occasionally broken, consisting largely of arable ridges; between these ridges extend valleys which are generally narrow. The highlands are divided into three general ridges extending north and south. The first group occupies the extreme eastern edge of the county; the second lies between the valleys of the Otselic and the Tioughnioga rivers. The third group embraces all the highlands lying west of the Tioughnioga. These highlands are all divided laterally by the valleys of small streams.

The northern part of the county is traversed by several large valleys, which converge into one at Cortland. In the southeastern part are three valleys somewhat narrower than those of the northern part and having several branches. The three broadest valleys are as follows: The Homer valley in the northern part running north and south past Cortland; the Otselic across the southern part of the county; and the Harford across the southwestern part.

That part of the Allegheny plateau included within Cortland County has an average elevation of about 1,800 feet, the higher points in the northern part of the county rising slightly above, and the greater part of the southern end lying a little lower.

The highest points in the county are Mt. Toppin in Preble and the Truxton and Owego hills in Virgil and Harford, which attain an elevation of 1,600 to 2,000 feet above tide. The drainage of the county is mostly through the Tioughnioga River and its principal branch, the Otselic River, these being tributary to the Susquehanna. The drainage of the northwestern part reaches Skaneateles Lake; that of the western part reaches Cayuga Lake; and that of the southwestern part, through Owego Creek, reaches the Susquehanna River.

In Cortland County the underlying rocks consist of light-colored shale and sandstone with occasional thin layers of limestone. In the valleys are deep morainal deposits of mixed origin. The valleys which converge near Cortland contain several areas which are strongly influenced by limestone. Where the material was deposited under lake conditions it is heavy in texture from the surface downward and there is little or no stone present. The typical gravel terraces, however, consist of beds of gravel and sand covered with a thin loam.

DESCRIPTION BY TOWNSHIPS

Cincinnatus: The surface consists of the narrow valley of the Otselic River and the high ridges rising on either side. The soil is generally a gravelly loam, best adapted to grazing. It is a typical dairy township, milk being the principal product.

Products: Milk, cabbage, and potatoes.

Average values of farm land range from $25 to $35 an acre.

Cortlandville: The surface of much of the town is level, the hills being confined principally to the eastern and southern parts. These hills are generally arable to their summits. The Tioughnioga River flows through the central part of the town. The soil is generally a sandy or gravelly loam. The Reed Brothers of Cortland, who are large growers of cabbage, produce choice cabbage seed.

Products: Dairy products, cabbage, potatoes, and canning crops, including peas, beans, and beets.

Average values of farm land range from $55 to $75 per acre.

CUYLER: The surface consists largely of a broken upland, especially in the southern part. The Tioughnioga River flows through the northern part of the town. The soil is generally sandy and gravelly.

Products: Principally milk.

Average values of farm land range from $25 to $35 per acre.

FREETOWN: The surface is high and hilly, broken by narrow ravines. The soil is a sandy, gravelly loam, best adapted to pasturage.

Products: Milk, grain, and hay.

Average values of farm land range from $25 to $35 per acre.

HARFORD: The surface consists of high broken upland 1,500 to 2,000 feet above tide. The Owego Hills in the central part are the most elevated portions. The streams are small. The soil is a moderately productive sandy and gravelly loam.

Products: Milk, oats, hay, ensilage corn, and potatoes.

Average values of farm land range from $25 to $35 per acre.

HOMER: The surface is uneven, including valleys of the two branches of the Tioughnioga and the ridges bordering them. The valley of the West Branch is more than a mile wide and elevated 1,096 feet above tide. The eastern valley is narrower. In the west is a hilly upland 1,500 to 1,800 feet above tide. The soil on the river intervales is a deep rich alluvial loam well adapted to tillage. Among the hills it is a sandy or gravelly loam, suitable to pasturage.

Products: Dairy products, cabbage, potatoes, and canning crops, including peas, beans, and beets.

Average values of farm land range from $55 to $75 per acre.

LAPEER: This town includes the high ridges west of the Tioughnioga River on the southern border of the county. Luce Hill in the northwestern part of the town is 1,600 to 2,000 feet above tide. The soil is a sandy and gravelly loam.

Products: Hay, buckwheat, oats, and dairy products.

Average values of farm land range from $25 to $35 per acre.

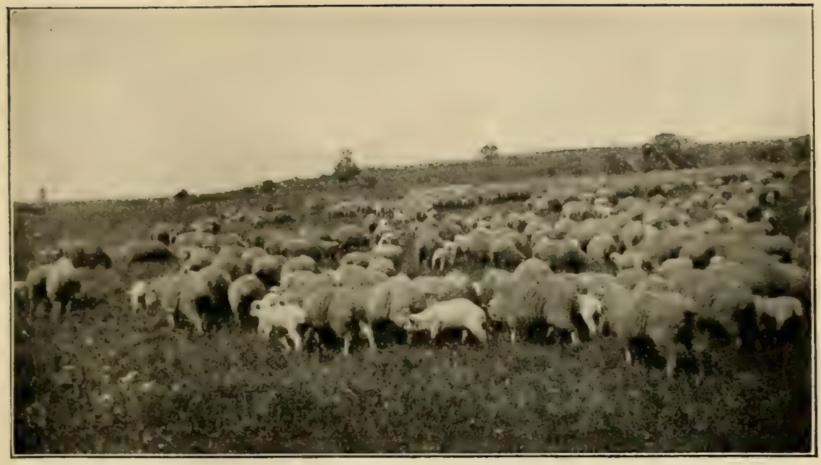


FIG. 55.—A FLOCK OF CORTLAND COUNTY SHEEP

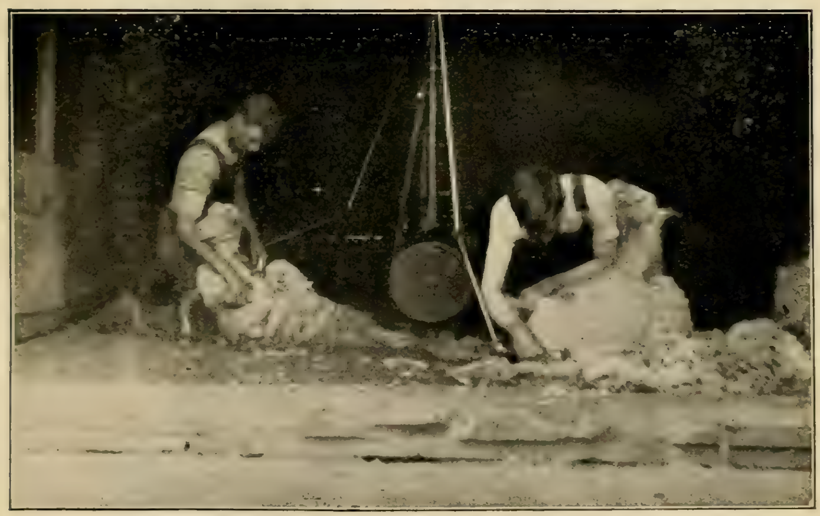


FIG. 56.—SHEARING THE FLOCK

MARATHON: The surface is rugged and hilly, the ridges rising 500 to 700 feet above the valleys. The Tioughnioga flows through a deep, narrow valley in the western part. Hunt Creek in the northwest and Merrill Creek in the east also flow through deep, narrow valleys. These valleys include most of the arable land, the uplands being more suitable for pasturage. Marathon is a typical dairy township. The soil is a sandy and gravelly loam.

Products: Milk, ensilage corn, potatoes, cabbage, and hay.

Average values of farm land range from $45 to $55 per acre.

PREBLE: The surface includes the valley of the West Branch of the Tioughnioga and the ridges rising on the east and west. In this town the valley is nearly two miles wide. Mt. Toppin, in the southwest, is 1,700 feet above tide, and the Truxton Hills, on the northeast border, are the highest points in the county, 2,000 feet in height. In the northern and southern portions of the town are several small lakes. The soil is a fine quality of gravelly loam. Preble is a typical dairy township.

Products: Dairy products, cabbage, ensilage corn, hay, and grain.

Average values of farm land range from $45 to $55 per acre.

SCOTT: The surface is mostly upland, broken by two deep narrow valleys extending north and south through the town. Skaneateles Lake borders on the northwest corner. The soil is a sandy, gravelly loam, best adapted to grazing. The lower sections of this town are particularly well suited to the growing of cabbage, and the hill lands to the growing of potatoes.

Products: Milk, grain, hay, cabbage, and potatoes.

Average values of farm land range from $25 to $35 per acre.

SOLON: The surface is mostly upland, broken by numerous narrow valleys of small brooks and creeks. The hills on the eastern border are 1,500 to 1,900 feet above tide. The soil is a gravelly loam, well adapted to grazing.

Products: Milk.

Average values of farm land range from $25 to $35 per acre.

TAYLOR: The surface is largely a broken, hilly upland. The streams are small brooks, generally flowing south into the Otselic. The soil is a sandy, gravelly loam. This is perhaps the only town where all the milk is used for the manufacture of butter and cheese.

Products: Dairy products and swine.

Average values of farm land range from $25 to $35 per acre.

TRUXTON: The surface consists of a broken upland, the ridges having a general north and south direction. The east branch of the Tioughnioga flows through the center of the town. North of the river much of the surface is divided into sharp ridges. Muncey Hill, in the southeastern part, is a wild, broken region. The soil is generally sandy and gravelly loam.

Products: Milk, cabbage and potatoes.

Average values of farm land range from $45 to $55 per acre.

VIRGIL: The surface is a broken hilly upland. In the southeastern part the Owego hills rise 1,600 to 2,000 feet above tide. The valleys are generally narrow. The soil is a sandy, gravelly loam, best adapted to grazing, although it is an excellent potato section.

Products: Potatoes, milk, and cabbage.

Average values of farm land range from $25 to $35 per acre.

WILLET: The surface includes the narrow valleys of the Otselic River and the high ridges rising on either side. The soil is a sandy, gravelly loam.

Products: Milk, butter, and cheese.

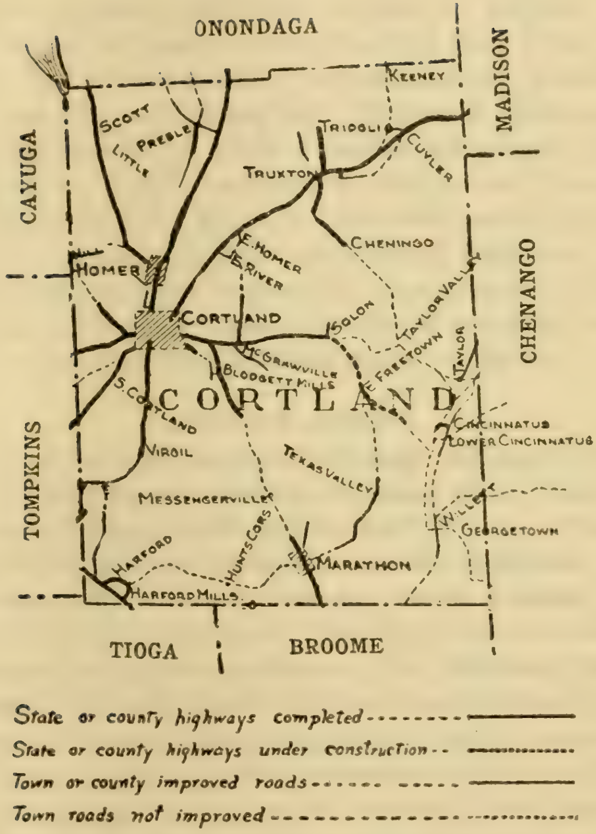
Average values of farm land range from $25 to $35 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The Delaware, Lackawanna and Western running between Syracuse and Binghamton extends north and south through the county, a branch at Cortland leading east through McGraw to Cincinnatus. The Lehigh Valley passes through Cortland, extending to Canastota on the northeast, and to Freeville and Ithaca on


ONONDAGA
MADISON
CAYUGA
CHENANGO
TOMPKINS
TIOGA
BROOME
CORTLAND
Keeney
Scott
Preble
Little
Triggli
Cuyler
Truxton
Cheningo
Homer
E. Homer
E. River
Cortland
Solon
Taylor Valley
McGrawville
Blodgett Mills
E. Freetown
Taylor
S. Cortland
Cincinnatus
Lower Cincinnatus
Virgil
Texas Valley
Messengerville
Willet
Georgetown
Harford
Hunts Cors
Marathon
Harford Mills
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

the southwest. The town of Harford is crossed by the Lehigh line running between Freeville and Owego.

An electric road extends from Cortland north to Preble and east to McGraw.

Improved Highways

Improved highways lead from Cortland as follows: North through Homer to Syracuse, a road running from Homer to the northwest part of the county; northeast through Truxton and Culver; another road running from Truxton to Cheningo; east through McGrawville to Solon, a branch extending to Blodgett Mills; south to Virgil; southwest to Dryden and Ithaca; and west to the county line. A short section extends south from Preble and another connects Harford and Harford Mills, and another passes through Marathon, extending a short distance beyond.

There are in the county eighty-five miles of completed improved highway, eight miles additional being under construction.

AVAILABLE MARKETS

The city of Cortland contains several large and important manufacturing establishments. Perhaps foremost among these is that of Wickwire Brothers, which employs over 1,000 men in the manufacture of wire and steel products. Another well-known firm is the Brockway Motor Truck Company, which rendered special service during the recent war. This city is also the seat of a very extensive wall paper manufactory. The Eckenburg Company manufactures dry milk powder and the Teco pancake flour.

At Homer is located a large milk shipping station owned by the Clover Farms Company, which handles the milk of nearly one-third of the cows in the county and employs a large force in the pasteurizing and bottling of grade A milk, which is shipped direct to New York City. In the village of Homer stands the David Harum Inn. This building was formerly the home of David Harum, whose name has become so familiar through the writings of Edward Noyes Westcott.

Marathon has a large tanning establishment, and quantities of hemlock and bark are shipped in for this purpose. The more important outside markets are New York, Philadelphia, Baltimore, Pittsburgh, Scranton, and Wilkes Barre.

Probably three-quarters of the milk collected at the various milk establishments is sent to New York City as market milk. Over 1,000,000 pounds of American cheese is made in the county, and malted milk and powdered whole and skim milk is manufactured. The first powdered milk made by the Ekenberg process was manufactured in Cortland in 1905.

There are two large canning factories in the county.

The agricultural organizations are as follows:

Beardslee Cooperative Creamery Company.
Cortland County Agricultural Society.
Cortland County Dairymen's League.
Cortland County Farm Bureau Association.
Cortland County Maple Sap Products Cooperative Association, Inc.
Cortland County Seed Growers' Cooperative Association, Inc.
Cortland County Sheep Breeders' Cooperative Association, Inc.
Cortland Holstein Club.
Cortland Union Beekeepers' Association.
Granges: Pomona and twenty subordinate granges.
Marathon Cooperative Farmers' Association, Inc.
McGrawville Dairy Cooperative Association, Inc.
Patrons of Industry: one association.
Sears Dairy Products Cooperative Association, Inc.
Tioughnioga National Farm Loan Association.

EDUCATIONAL FACILITIES

Cortland is the seat of a state normal school and the Cortland Conservatory of Music.

Schools registered with the regents as having facilities suitable for maintaining high school and academic courses are located at Cincinnatus, Cortland, Homer, McGraw, Marathon, and Truxton.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	299,707
Number of farms	2,610
Per cent of farm land improved	66.5

LIVE STOCK PRODUCTS

Milk sold	13,740,015 gal.
Cream sold	4,143 gal.
Butter fat sold	216,367 lbs.
Butter produced	144,343 lbs.
Cheese produced	165 lbs.
Eggs produced	1,033,049 doz.
Wool produced	1,913 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	7,033
Cattle	43,239
Sheep	3,616
Swine	5,233
Poultry	153,550

BEES

Number of colonies	2,524

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	1,852	74,105
Oats	13,028	396,974
Wheat	142	1,850
Barley	893	24,348
Buckwheat	4,625	110,793
Rye	44	913

	Acres	Tons
Hay and forage	80,895	130,414

Special crops:	Acres	Yield
Potatoes	4,961	750,187 bu.
Vegetables, other than potatoes	2,229	....
Dry edible beans	41	335 bu.
Dry peas	46	456 bu.

Fruits:		
Apples	95,277 trees	131,575 bu.
Peaches and nectarines	402 trees	229 bu.
Pears	7,918 trees	4,994 bu.
Plums and prunes	5,641 trees	1,883 bu.
Cherries	8,197 trees	1,629 bu.
Quinces	42 trees	13 bu.
Grapes	1,026 vines	20,316 lbs.
Small fruits	69 acres	81,873 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,537	2,105

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	6,865	5,960
Cattle	39,621	35,630
Sheep	2,323	1,855
Swine	2,663	3,148
Poultry	153,705	109,301

BEES

	1917	1918
Number of colonies	1,302	1,390

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	1,008	1,060	24,608
Oats	13,961	10,308	246,136
Barley	636	663	11,828
Buckwheat	3,370	3,166	51,083
Wheat (winter)	311	322	5,620
Wheat (spring)	74	234	2,652
Rye	75	84	1,260

	1917	1918	
Hay and Forage:	Acres	Acres	Yield
Alfalfa	810	668	1,764 tons
Other hay	74,480	59,924	80,780 tons
Corn (ensilage)	6,495	4,434	35,440 tons
Corn (foddeer)	....	1,197	....
Special crops:			
Field beans	254	382	2,666 bu.
Cabbage	1,219	1,551	8,677 tons
Potatoes	3,960	4,256	316,186 bu.
Roots raised for stock food	....	92	....
Canning factory crops	498	546	....
Other vegetables and garden crops	443	451	....
Fruits:			
Apples	2,384	2,572	59,789 bu.
Peaches	29	1	43 bu.
Pears	29	40	676 bu.
Plums	33	43	14,330 lbs.
Cherries	63	30	13,647 lbs.
Quinces	....	....	4 bu.
Vineyard	105	1	252 lbs.
Small fruits	139	49	....

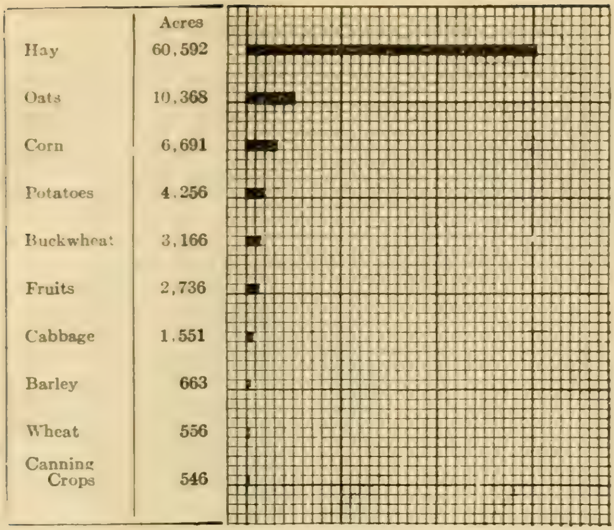


FIG. 57—CHART SHOWING RELATIVE ACREAGE OF CROPS IN CORTLAND COUNTY

DELAWARE COUNTY

This county lies in the southern part of the state at the headwaters of the Delaware River. The area is 927,360 acres. The county extends approximately 38 miles from north to south and 49 miles from east to west. The population is distributed throughout the county as follows:

Population by Cities and Townships

(Census of 1915)

Andes	2,084	Masonville	988
Bovina	867	Meredith	1,472
Colchester	3,250	Middletown	4,026
Davenport	1,393	Roxbury	2,318
Delhi *	2,852	Sidney	4,215
Deposit	1,645	Stamford	2,343
Franklin	2,222	Tompkins	1,919
Hamden	1,387	Walton	5,275
Hancock	4,908		
Harpersfield	1,223	Total	45,995
Kortright	1,608		

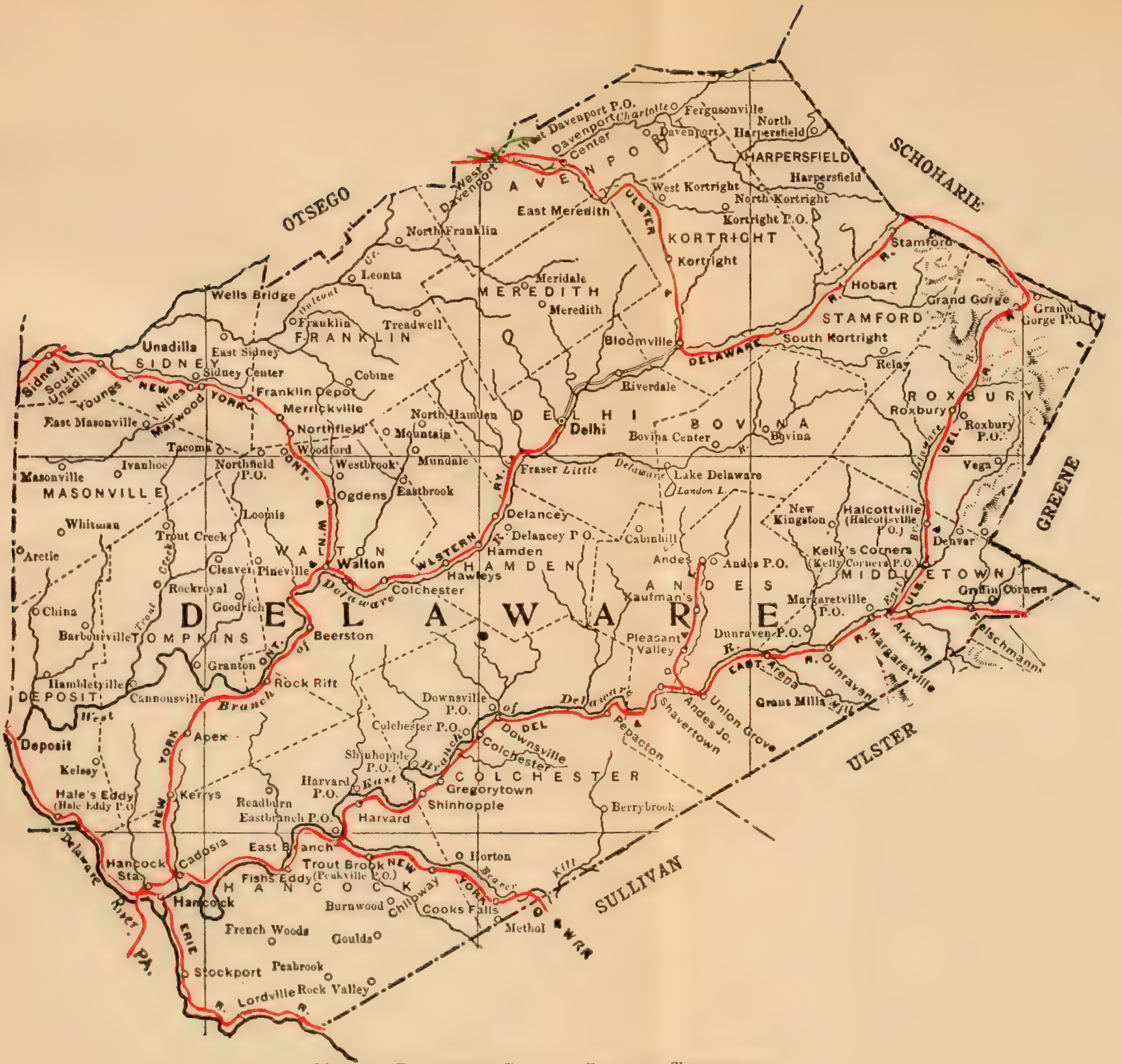
---

* Delhi, in the town of Delhi, is the county seat.

HISTORICAL ASSOCIATIONS

Delaware County was formed from Ulster and Otsego in 1797. It was named from the Delaware River, which derives its name from Lord Delaware. The Mohicans, sometimes called the Delaware Indians, frequented this section on hunting excursions, establishing camps which remained fixed for months, but no part of the present county was ever the permanent home of the Indians. However, this right to rove the forests, in the opinion of the savages, gave them an ownership in territory.

When the great Hardenberg Patent was granted by Queen Anne in 1708 it was required of the patentees that they must extinguish the Indian titles. In doing this there arose a controversy as to whether the tract lying between the east and west branches of the Delaware River was included in the sale. The dispute was settled by the purchase of the territory from the Indians for the sum of £149 19s. A later dispute as to the western boundary to which white settlements might extend was settled by a treaty signed at Fort Stanwix, 1768, by Sir William Johnson and representatives


West Davenport P.O.
Charlotte
Fergusonville
North Harpersfield
Davenport
Davenport Center
DAVENPORT
HARPERSFIELD
Harpersfield
SCHOHARIE
West Kortright
North Kortright
Kortright P.O.
West Davenport
East Meredith
ULSTER
KORTRIGHT
Kortright
OTSEGO
North Franklin
Stamford
Leonta
Meridale
Hobart
MEREDITH
Meredith
Grand Gorge
Grand Gorge P.O.
Wells Bridge
Ouleout
Franklin
Treadwell
FRANKLIN
STAMFORD
Bloomville
South Kortright
DELAWARE
East Sidney
Relay
Unadilla
SIDNEY
Sidney Center
Cobine
Riverdale
Sidney
South Unadilla
Youngs
NEW
Niles
YORK
Franklin Depot
Merrickville
ROXBURY
Roxbury
Roxbury P.O.
East Masonville
Maywood
Northfield
North Hamden
DELHI
Delhi
Mountain
BOVINA
Bovina Center
Bovina
Tacoma
Woodford
Mundale
Vega
Masonville
Ivanhoe
Northfield P.O.
Westbrook
Fraser
Little
Delaware
Lake Delaware
Landon L.
MASONVILLE
Ogdens
Eastbrook
CONT.
New Kingston
Halcottville
(Halcottsville P.O.)
GREENE
Whitman
Loomis
Delancey
Delancey P.O.
Cabinhill
Trout Creek
WALTON
Walton
WESTERN
Hamden
HAMDEN
Andes
Andes P.O.
Kelly's Corners
(Kelly Corners P.O.)
Denver
Arctic
Cleaver
Pineville
Hawleys
MIDDLETOWN
Colchester
ANDES
Kaufman's
Griffin Corners
Rockroyal
Goodrich
Margaretville P.O.
China
DELAWARE
TOMPKINS
Beerston
Pleasant Valley
Dunraven P.O.
Barbourville
BROOME
Fleischmann's
Arkville
Granton
Rock Rift
Dunraven
Margaretville
Hambletville
DEPOSIT
Cannonsville
Downsville P.O.
EAST
Arena
Grant Mills
Union Grove
Branch
Andes Jc.
Shavertown
Pepacton
West
Deposit
Apex
Colchester P.O.
Downsville
Colchester
ULSTER
Kelsey
Shinhopple P.O.
COLCHESTER
Harvard P.O.
Gregorytown
Hale's Eddy
(Hale Eddy P.O.)
Kerrys
Readburn
Shinhopple
Berrybrook
Eastbranch P.O.
Harvard
East Branch
Horton
Hancock Sta.
Cadosia
Trout Brook
(Peakville P.O.)
Fishs Eddy
HANCOCK
Beaver Kill
SULLIVAN
Hancock
Burnwood
Chiloway
Cooks Falls
Methol
ERIE
Delaware River
PA.
French Woods
Goulds
Stockport
Peabrook
Lordville
Rock Valley
CHENANGO

MAP OF DELAWARE COUNTY, SHOWING TOWNSHIPS

Red lines indicate railroads

of each of the six confederated nations, Mohawks, Oneidas, Tuscaroras, Onondaga, Cayugas, and Senecas. Delaware County lay to the east of this line — "the line of properties."

The only part of the present county claimed to have been occupied by white settlers prior to the Fort Stanwix treaty is in the present town of Middletown. These adventurers were of Dutch extraction and came from Hurley, Ulster County, about 1763. Sidney and Harpersfield were settled at about 1770.

The great mass of the early settlers came from New England. Scotch families, however, flocked in at various times, choosing the hills and uplands for their homes. This is accounted for partly by the fact that the Dutch and later settlers had taken up many of the low-lying lands, and partly because of the general poverty of the Scotch, which led them to select the cheaper lands. It is quite possible that their fond memories of the mountains from which they came had an additional influence upon their choice.

During the Revolution the pioneers were driven out but they returned to their abandoned farms at the close of the war.

DEVELOPMENT OF INDUSTRY

Lumbering early formed one of the great industries and as late as 1860 the county was surpassed in the number of saw mills only by Steuben and Oneida. The lumber was cut in winter and in the spring it was built into rafts and floated down the Delaware river to Philadelphia.

In the extreme southern part is a section on which the original forest still stands. In this section lumbering operations and the manufacture of wood products, including wood alcohol and acetate of lime, offer employment to a large number of people.

Tanning was extensively followed as long as hemlock timber was available. Millions of feet of hemlock timber was cut for the bark and left to rot in the woods. The making of maple sugar was, from the earliest times, a prominent occupation.

As the forests disappeared, butter making was adopted as the industry best adapted to the soil, Bovina being the pioneer in that occupation. Rye, oats, buckwheat, corn, and potatoes were raised. but usually for home consumption only. The great question in reference to every farm was the amount of grass and hay that could be obtained for the cows. The usual daily milking was from six to ten quarts. From this, with the best success, about 100 pounds of butter would be made during the season. In 1860 this county stood second only to St. Lawrence in the amount of butter produced. In 1918 it ranked first in the production of milk; it also stood second in the number of cattle, as well as in the amount of maple sirup produced.

CLIMATE AND RAINFALL

Climatological records for Delaware County are taken from the station at Griffin Corners, at an elevation of 2,260 feet.

Average dates for the last killing frost in spring and the first in fall are May 24 and September 16, respectively, giving a growing season of 115 days.

The following table summarizes records from March, 1900, to April, 1913, inclusive:

RECORD OF TEMPERATURE AND PRECIPITATION AT GRIFFIN CORNERS

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	21.2	65	1906	—31	1904	2.51	1.31	1905	12.1
February	18.6	63	1906	—28	1908	2.61	1.70	1909	11.1
March	31.6	79	1905	—15	1907	3.04	1.45	1903	7.3
April	42.0	84	1913	6	1911	3.41	2.98	1901	3.1
May	54.3	94	1911	15	1907	2.88	1.88	1906	T.
June	60.6	94	1901	29	1907	3.63	3.12	1903	......
July	65.7	100	1911	33	1912	3.70	2.86	1905	......
August	62.8	91	1909*	32	1912	4.07	1.65	1911	......
September	58.3	88	1908	20	1904	3.78	2.38	1908	......
October	46.4	84	1908	11	1907	3.79	4.84	1903	1.0
November	31.1	73	1909	—4	1903	2.51	2.01	1906	8.5
December	26.0	61	1901	—17	1904*	3.42	3.05	1901	14.1
Year	43.2	100	1911	—31	1904	39.35	4.84	1903	57.2

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is a hilly and mountainous upland, divided into three general ridges by the valleys of the two principal branches of the Delaware River. In the southern part of the county these ridges form a mountainous region with elevated, rocky peaks and steep slopes broken by wild and narrow ravines. In the north the highlands are less wild and precipitous and the whole region assumes the character of a rugged, hilly upland. The main, or west branch of the Delaware River takes its rise in Utsayantha Lake, a small sheet of water on the northeastern line of the county. In the course of the river through the county, which is approximately sixty miles, it descends about 1,000 feet.

The Susquehanna forms a portion of the northern boundary of the county. Charlotte River and Ouleout Creek are tributaries of the Susquehanna. The other streams are creeks and brooks, the valleys of which are usually narrow and bordered by steep hills that often rise into mountains. There is an immense amount of water power in the county. Numerous springs abound, which, with the excellent pastures, make the county well adapted to sheep raising and dairying. The rocks of the county belong mostly to the old red sandstone of the Catskill division. The mineral wealth is limited to stone of a fine quality, useful for building and flagging, which is found in large quantities.

DESCRIPTION BY TOWNSHIPS

ANDES: The surface is a broken and hilly upland intersected by the deep, narrow ravines of the east branch of the Delaware and its tributaries. The Delaware flows southwest through the town. Many of the hillsides are heavily wooded. The soil on the hills is a clay and shale admirably adapted to grazing. The dark, rich alluvial belts along the streams yield heavy crops of grass and cereals.

Products: Dairy products (including market milk, cream, butter, cheese and casein), and some timber and excelsior.

Average values of farm land range from $15 to $30 an acre.

BOVINA: The surface is a hilly upland broken by the deep valleys of small streams. The highest summits are 2,500 to 3,000 feet above tide. The principal streams are Little Delaware River and its tributaries. The valleys of these streams are narrow and are bordered by steep, rocky hillsides. The surface is stony and the soil generally a clayey loam admirably adapted to grazing.

Products: Powdered milk, hay, oats, buckwheat, ensilage corn, maple sirup, potatoes and vegetables.

Average values of farm land range from $12 to $26 an acre.

COLCHESTER: The surface is a mountainous upland broken by narrow valleys of the streams. The east branch of the Delaware and the Beaver Kill flow through the town, receiving the waters from several smaller streams.

The alluvial lands bordering the Delaware River and Beaver Kill are naturally fertile and the fertility is renewed by the annual overflow of the river. The soil on the hills is a reddish clay, often very stony, and in the valleys a sandy loam. Stone is quarried for flagging and building purposes.

Products: Dairy products, wood chemical products and general farm crops.

Average values of farm land range from $10 to $25 an acre.

DAVENPORT: The surface is a broken upland divided into two ridges by the valley of Charlotte River. These ridges are subdivided by the narrow valleys of its tributaries. The soil is a dark, clayey loam mixed with slate.

Products: Dairy products, general farm crops and potatoes.

Average values of farm land range from $15 to $30 an acre.

DELHI: The surface is a hilly upland broken by deep valleys of streams. The principal streams are the west branch of the Delaware and its tributaries, including Little Delaware River. The soil is a clayey loam on the hills and a rich sandy loam in the valleys, the surface being very stony in places. In this town is located the State School of Agriculture and Domestic Science. Delhi claims the largest shipment of dairy products of any town in the United States.

Products: Dairy products, maple sirup, potatoes, hay and general farm crops.

Average values of farm land range from $15 to $35 an acre.

DEPOSIT: The surface is broken and rocky. The west branch of the Delaware crosses the town through the center. The soil is clay, slate, and gravelly loam.

Products: Dairy products, general farm crops, blue sandstone of fine quality, some lumber and maple sirup.

Average values of farm land range from $12 to $30 an acre.

FRANKLIN: The surface is a hilly upland broken by deep, narrow valleys. The principal streams are Ouleout Creek and its tributaries. The soil on the hills is a shaly loam underlaid by hardpan, and in the valleys a gravelly loam and alluvium.

This town keeps more cows and manufactures more butter than any other town in the county.

Products: Dairy products, potatoes and general farm crops.

Average values of farm land range from $15 to $35 an acre.

HAMDEN: The surface is a mountainous upland divided into two parts by the west branch of the Delaware. The southern part is covered by lofty peaks and ridges scarcely susceptible of cultivation. The soil on the hills is generally a brownish clay loam underlaid by hardpan, and in the valleys it is a rich sandy loam.

Products: Dairy products, with some potatoes, hay and ensilage corn.

Average values of farm land range from $12 to $30 an acre.

HANCOCK: The surface is a mountainous upland ending in high and nearly precipitous bluffs on the Delaware and divided into two parts by the east branch of the Delaware. Both the Delaware river and its east branch have many tributaries in this town flowing through narrow ravines. The summits of the hills are 100 to 800 feet above the valleys. The soil on the uplands is a hard clayey loam, and in the valleys there are some fine agricultural lands. A number of well-built highways have been constructed by the town.

Products: Fine quality of blue sandstone, some lumber, maple sugar, market milk, butter, cheese and excelsior.

Average values of farm land range from $10 to $25 an acre.

HARPERSFIELD: The surface is a rolling upland, constituting a portion of the high plateau region stretching westward from the Catskill mountains. The principal streams are the head branches of the west branch of the Delaware in the south; of Middlebrook in the center, and of Charlotte River in the north. The valleys are usually narrow and bordered by gradually sloping hills, arable to their summits. The soil is a shaly and slaty loam of good quality.

Products: Dairy products, potatoes and general farm crops.
Average values of farm land range from $10 to $30 an acre.

KORTRIGHT: The surface is a hilly upland broken by narrow valleys and ravines. The average elevation of the town is 1,700 feet above tide, the highest summits attaining an elevation of 2,400 feet. The principal streams are tributaries of the west branch of the Delaware, which drains the southern part of the town, and those of the Charlotte River, which drains the northern half of the town.

Although the hills are steep they are generally susceptible of cultivation. The soil is a dark, shaly loam, well adapted to pasturage.

Products: Dairy products, potatoes, ensilage corn and general farm crops.
Average values of farm land range from $15 to $30 an acre.

MASONVILLE: The surface is a hilly upland divided by the valley of Bennett's Creek. The ridges are subdivided by numerous lateral ravines through which flow small brooks. The highest summits are 600 to 1,000 feet above the valleys. The surface is stony and the soil is shaly loam, difficult of cultivation except in the valleys.

Products: Dairy products and general farm crops.
Average values of farm land range from $15 to $30 an acre.

MEREDITH: The surface is a hilly upland, although less broken than most of the towns. The southern and eastern portions of

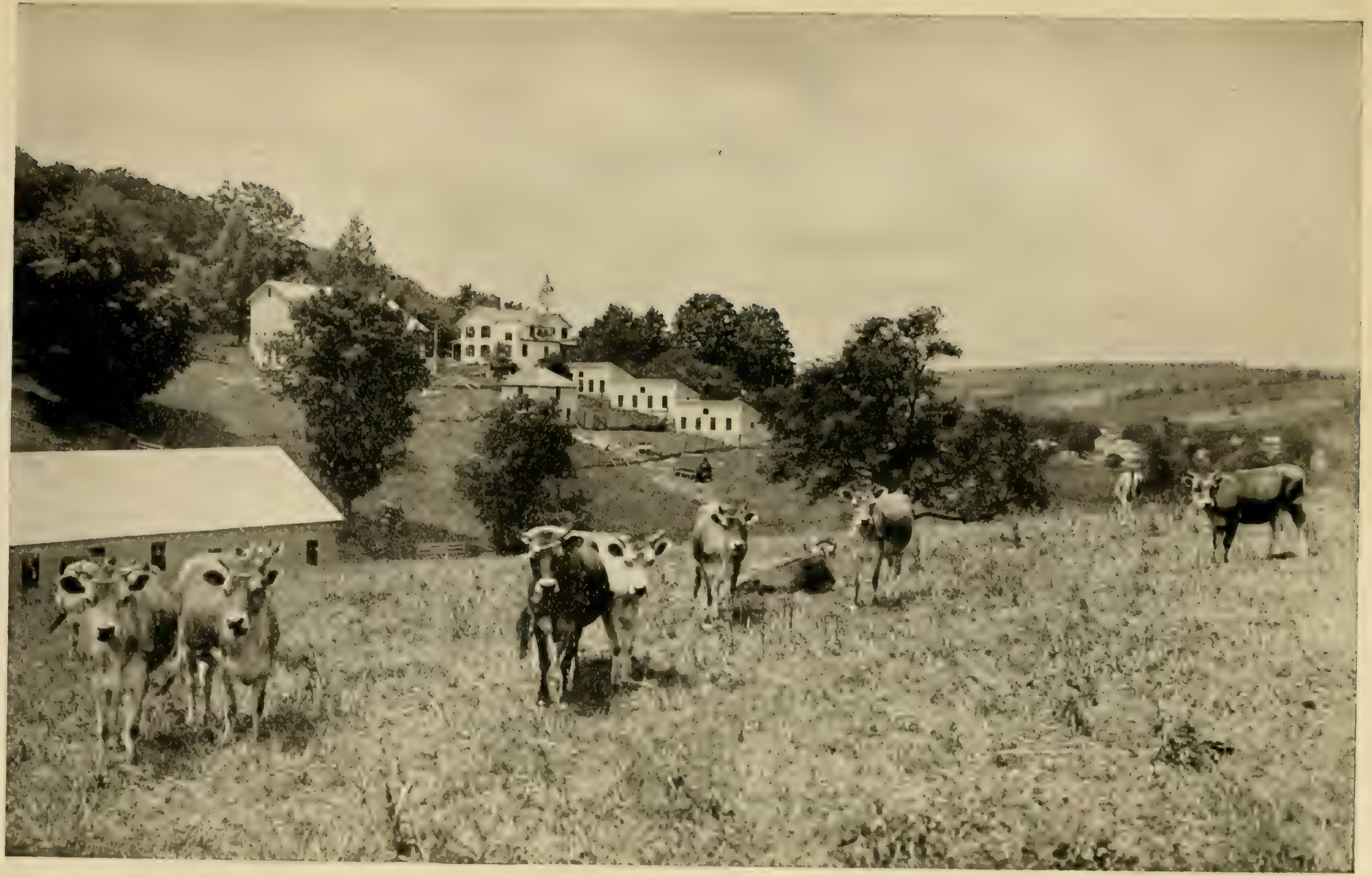


FIG. 58. A GROUP OF MERIDALE HEIFERS

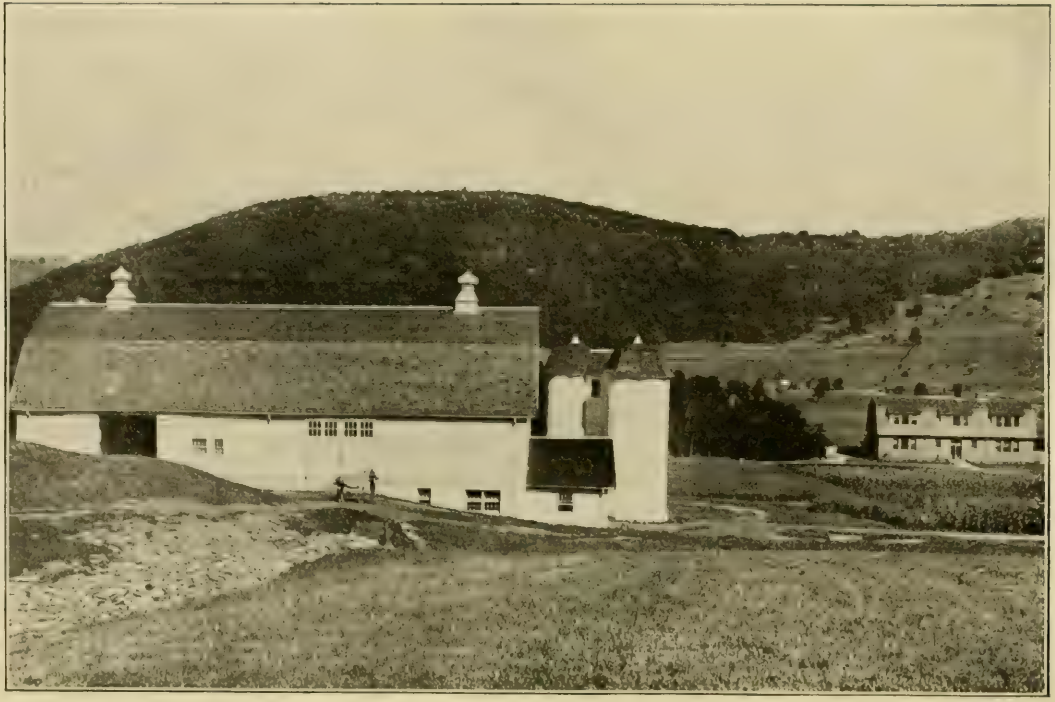


FIG. 59.—BARN AND DAIRY BUILDING, STATE SCHOOL OF AGRICULTURE AND DOMESTIC SCIENCE, DELHI

the town are occupied by the ridges forming the watershed between the Susquehanna and Delaware rivers. The streams are small brooks and creeks. The soil is a reddish clay and shaly loam. This town lies in the midst of a section noted for the rich quality of its milk and cream. The celebrated Jersey herd owned by Ayer and McKinney is located near Meridale.

Products: Dairy products, potatoes and general farm crops.

Average values of farm land range from $10 to $30 an acre

MIDDLETOWN: The surface is hilly and mountainous in the eastern portions. The Pepacton or east branch of the Delaware flows through the center, with several small streams emptying into it on either side. Each of these streams drains a fertile valley broad in the upper and central portions but becoming narrower and descending more rapidly as they approach the main stream, thus furnishing an immense amount of water power. All the hills are more steep and rocky on the northern and western sides, while toward the east and south they slope off gradually into good farming and grazing lands. Dry Brook Ridge, in the southern part, reaches an elevation of 3,500 feet. The prevailing rock is red sandstone, which furnishes excellent flagging and building stone. The uplands contain a large percentage of clay; in the valleys the soil is alluvial and is very productive. Large quantities of cauliflower are produced, especially near Margaretville.

Products: Dairy products, cauliflower and general farm crops.

Average values of farm land range from $12 to $30 an acre.

ROXBURY: The surface is a mountainous upland forming a portion of the great plateau extending west from the Catskill Mountains. The hills are steep and rocky and are mostly unfit for cultivation. The highest points on the northern and western borders of the town are 3,000 to 3,300 feet above tide. The principal stream is the east branch of the Delaware; numerous smaller creeks flow through the town. The soil is a reddish, clayey loam.

Products: Dairy products, cauliflower and general farm crops.

Average values of farm land range from $12 to $30 an acre.

SIDNEY: The surface is a hilly upland ending in high bluffs along the valley of the river. The highest summits are 800 to 1,200 feet above the valley. Ouleout and Carrs creeks flow west through the town and empty into the Susquehanna. The valleys are deep and narrow, bordered by steep rocky hills. The soil in the valleys is a fine fertile alluvium, while on the hills it is a dark, shaly loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $15 to $35 an acre.

STAMFORD: The surface is a mountainous upland. McGregor and Utsayantha, respectively 3,253 feet and 3,213 feet in height, are about 1,500 feet higher than the valleys. The west branch of the Delaware forms a portion of the northern boundary and several smaller streams flow through the town. The soil is principally a reddish clay and shaly loam. Stamford lies in the middle of a section much frequented by summer guests. Many dairies in this town are of considerable size.

Products: Dairy products, potatoes and general farm crops.

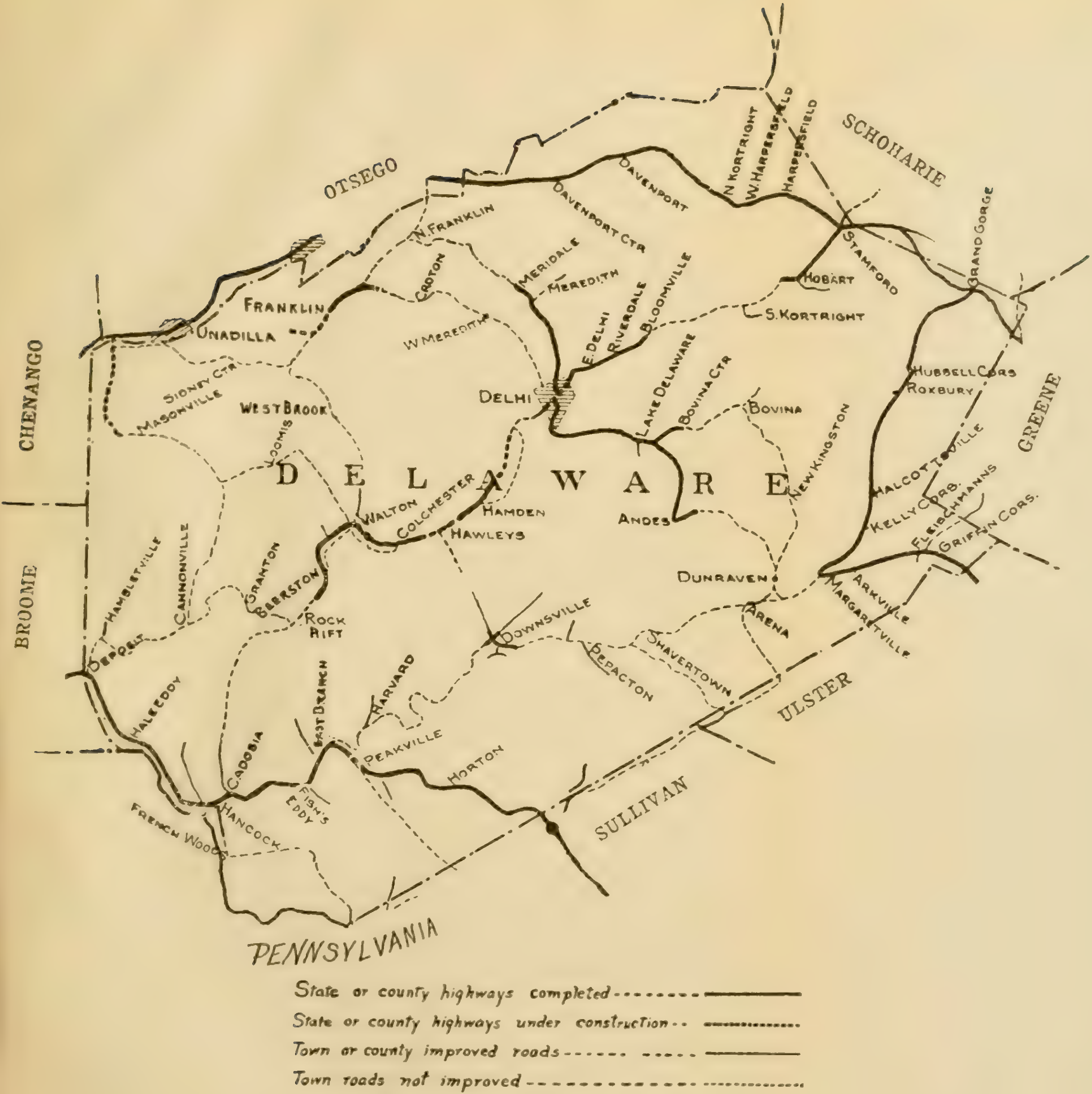
Average values of farm land range from $15 to $35 an acre.

TOMPKINS: The surface of the town south of the Delaware River is largely rocky and mountainous, too steep for cultivation. The northern part is broken and hilly, but a portion of it is being cultivated. The soil is a clayey, slaty and gravelly loam.

Products: Dairy products, maple sirup and some lumber.

Average values of farm land range from $5 to $30 an acre.

WALTON: The deep valley of the Delaware River divides this town into two nearly equal parts. The southern part is a broad mountainous region mostly too rough for cultivation. The northern half is broken and hilly, but generally well adapted to pastur-


OTSEGO
SCHOHARIE
CHENANGO
BROOME
GREENE
ULSTER
SULLIVAN
PENNSYLVANIA
DELAWARE
N KORTRIGHT
W. HARPERSFIELD
HARPERSFIELD
DAVENPORT
DAVENPORT CTR
N. FRANKLIN
STAMFORD
HOBART
GRAND GORGE
MERIDALE
MEREDITH
CROTON
FRANKLIN
UNADILLA
W MEREDITH
E. DELHI
RIVERDALE
BLOOMVILLE
S. KORTRIGHT
HUBBELL CORS
ROXBURY
SIDNEY CTR
MASONVILLE
WEST BROOK
LOOMIS
DELHI
LAKE DELAWARE
BOVINA CTR
BOVINA
NEW KINGSTON
HALCOTTSVILLE
KELLY CORS.
FLEISCHMANNS
GRIFFIN CORS.
WALTON
COLCHESTER
HAMDEN
HAWLEYS
ANDES
DUNRAVEN
ARKVILLE
MARGARETVILLE
HAMBLETVILLE
CANNONVILLE
GRANTON
BEERSTON
ROCK RIFT
DEPOSIT
DOWNSVILLE
PEPACTON
SHAVERTOWN
ARENA
HALE EDDY
EAST BRANCH
HARVARD
PEAKVILLE
HORTON
CADOSIA
FISH'S EDDY
HANCOCK
FRENCH WOODS
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

age. The principal streams are East, West, and Pines brooks. The soil is a shaly loam on the hills and a fertile alluvium in the valleys. The Nestle Milk Company and the Breakstone Milk Company receive daily large quantities of milk.

Products: Milk and maple sugar and sirup of fine quality.

Average values of farm land range from $15 to $35 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The New York, Ontario and Western enters the town of Colchester, extends west through Hancock and into Pennsylvania. From Cadosia it extends to Walton, where it branches to Delhi, the main line extending from Sidney northwest to Oswego.

The Ulster and Delaware from Kingston enters the town of Middletown and extends into Arkville. From that point the road runs northeast through Roxbury into Schoharie County and back into Delaware through Stamford to Bloomville and northwest to Oneonta, where it makes connections with the Delaware and Hudson. The latter runs through Otsego County within a short distance of the northwest border of Delaware County, finally crossing the extreme western part of Sidney.

The Delaware and Northern runs through the southeastern part of Delaware County between East Branch on the New York, Ontario and Western, and Arkville on the Ulster and Delaware. A branch of the Delaware and Northern runs from Andes Junction to Andes.

Improved Highways

An improved highway from Monticello, Sullivan County, passes west through the southern part of Delaware to Binghamton. A road from Kingston enters the eastern part of Delaware, extending to Margaretville and northeast to Grand Gorge, where it meets a road from Greene County, and passes west through Stamford to Oneonta. At Stamford a short section extends southwest through Hobart. From Delhi three highways extend; one southeast to Bovina Center and Andes; a second northeast to Bloomville; and a third northwest to Meridale. Another section runs between Walton and Hamden, from which point it is under construction to Delhi. The total completed improved highways in the county is 152 miles, with twenty miles additional under construction.

AVAILABLE MARKETS

Delaware County, which has many prosperous dairy farms, contains about 50 milk establishments, a large number of which are creameries, and the milk from nearly 60,000 cows is collected annually. Over 280,000,000 pounds of milk pass through these establishments, nearly half of which is sold as market cream, for which New York City is the important market. Among the manufactured milk products of the county are 1,800,000 pounds of butter, 20,000,000 pounds of condensed and evaporated milk, and a large quantity of powdered whole and skim milk, the latter products amounting to probably 20 per cent of that made in the entire state. Some fancy and foreign types of cheese are manufactured.

Agricultural organizations in the county are as follows:

Andes Cooperative Dairy Co.
Bovina Cooperative Creamery Co., Inc.
Bovina Center Cooperative Creamery Co.
Bovina Dairy Improvement Association.
Delaware County Agricultural Society.
Delaware County Beekeepers' Cooperative Association, Inc.
Delaware County Dairymen's League.
Delaware County Farm Bureau Association.
Delaware County Jersey Improvement Association.
Delaware County National Farm Loan Association.
Delaware County Sheep Growers' Association.
Delaware Valley Agricultural Society.
Delaware Valley Cooperative Creamery Co., Inc.
Delhi Dairy Improvement Association.
Delhi Farmers' Cooperative Association, Inc.
East Branch Valley Dairy Improvement Association.
Farmers' Cooperative Dairy Co.
Franklin-Meridale Dairy Improvement Association.
Granges: Pomona and 15 subordinate granges.
Hamden Cooperative Creamery Co.
Mundale Farmers' Cooperative Association, Inc.
New Kingston Cooperative Creamery Co.
Roscoe Cooperative Creamery Co., Inc.
Stamford Farmers' Cooperative Association, Inc.
Tri-County Holstein-Friesian Breeders' Association.

EDUCATIONAL FACILITIES

Delhi is the seat of the State School of Agriculture and Domestic Science. Approved courses in agriculture and home making are given in the school at Walton.

Schools registered as having suitable facilities for maintaining approved courses for high school and academic work are located at the following points: Davenport, Franklin, Downsville, Griffin Corners, Hancock, Andes, Hobart, Margaretville, Roxbury, Sidney, Stamford, and Walton.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	768,131
Number of farms	5,044
Per cent of farm land improved	61.2

LIVE STOCK PRODUCTS

Milk sold	33,721,025 gal.
Cream sold	34,266 gal.
Butter fat sold	1,584,548 lbs.
Butter produced	349,130 lbs.
Cheese produced	540 lbs.
Eggs produced	1,743,357 doz.
Wool produced	4,780 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	12,022
Cattle	113,840
Sheep	9,302
Swine	10,526
Poultry	239,755

BEES

Number of colonies	4,546

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	1,420	45,785
Oats	12,980	337,938
Wheat	12	220
Barley	131	3,140
Buckwheat	7,191	132,284
Rye	254	3,609

	Acres	Tons
Hay and forage	169,596	247,773

Special crops:	Acres	Yield
Potatoes	4,331	479,061 bu.
Vegetables, other than potatoes	1,094	....
Dry edible beans	21	169 bu.
Dry peas	2	16 bu.

Fruits:		
Apples	190,896 trees	350,229 bu.
Peaches and nectarines	89 trees	32 bu.
Pears	8,024 trees	6,971 bu.
Plums and prunes	8,992 trees	3,105 bu.
Cherries	5,759 trees	1,653 bu.
Quinces	45 trees	24 bu.
Grapes	1,295 vines	30,666 lbs.
Small fruits	43 acres	71,250 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,770	4,537
LIVE STOCK AND POULTRY		
Horses and mules	11,330	10,870
Cattle	110,907	106,575
Sheep	5,266	4,111
Swine	8,184	6,719
Poultry	283,868	224,438
BEES		
Number of colonies	2,272	3,025

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	1,004	1,785	23,418
Oats	18,496	15,138	341,267
Barley	96	214	2,397
Buckwheat	6,105	8,606	107,310
Wheat (winter)	50	32	172
Wheat (spring)	48	168	1,723
Rye	361	275	2,978

Hay and forage:	1917	1918	
	Acres	Acres	Yield
Alfalfa	218	114	220 tons
Other hay	151,281	148,250	223,899 tons
Corn (ensilage)	6,819	6,409	50,813 tons
Corn (fodder)	....	1,970	....

	1917	1918	
	Acres	Acres	Yield
Special crops:			
Field beans	121	290	1,951 bu.
Cabbage	151	204	1,064 tons
Potatoes	3,813	4,979	297,835 bu.
Roots raised for stock food	....	74	....
Canning factory crops	12	6	....
Other vegetables and garden crops	985	882	....
Fruits:			
Apples	5,362	6,250	185,831 bu.
Peaches	3	2	13 bu.
Pears	115	82	1,476 bu.
Plums	250	58	28,138 lbs.
Cherries	250	42	7,533 lbs.
Quinces	....	....	.... bu.
Vineyard	24	1	572 lbs.
Small fruits	163	123	....

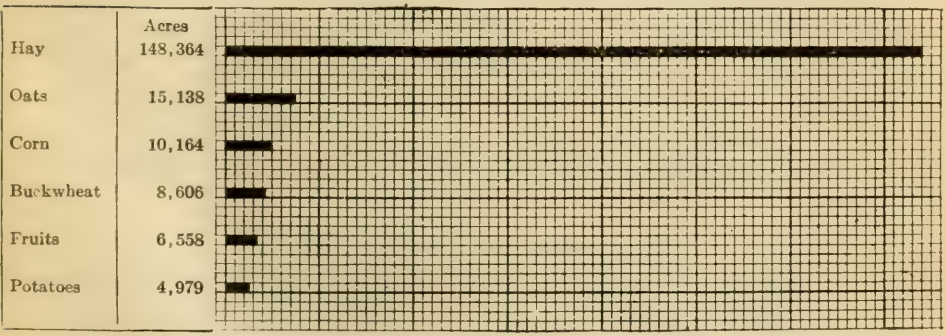


FIG. 60.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN DELAWARE COUNTY

DUTCHESS COUNTY

This county lies in the southeastern part of the state, the state of Connecticut forming the eastern boundary and the Hudson River lying on the west. Its area is 515,840 acres; its extent from north to south is approximately 40 miles and from east to west 23 miles. The population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

Beacon (city)	**10,165**	**Pine Plains**	**1,387**
Poughkeepsie (city)*	**32,714**	**Pleasant Valley**	**1,332**
Amenia	**2,204**	**Poughkeepsie**	**6,048**
Beekman	**951**	**Red Hook**	**3,808**
Clinton	**1,333**	**Rhinebeck**	**3,485**
Dover	**1,967**	**Stanford**	**1,582**
East Fishkill	**2,173**	**Union Vale**	**1,149**
Fishkill	**3,214**	**Wappinger**	**4,155**
Hyde Park	**3,144**	**Washington**	**3,538**
La Grange	**1,326**		
Milan	**824**		
North East	**2,342**	**Total**	**91,044**
Pawling	**2,203**		

---

* Poughkeepsie is the county seat.

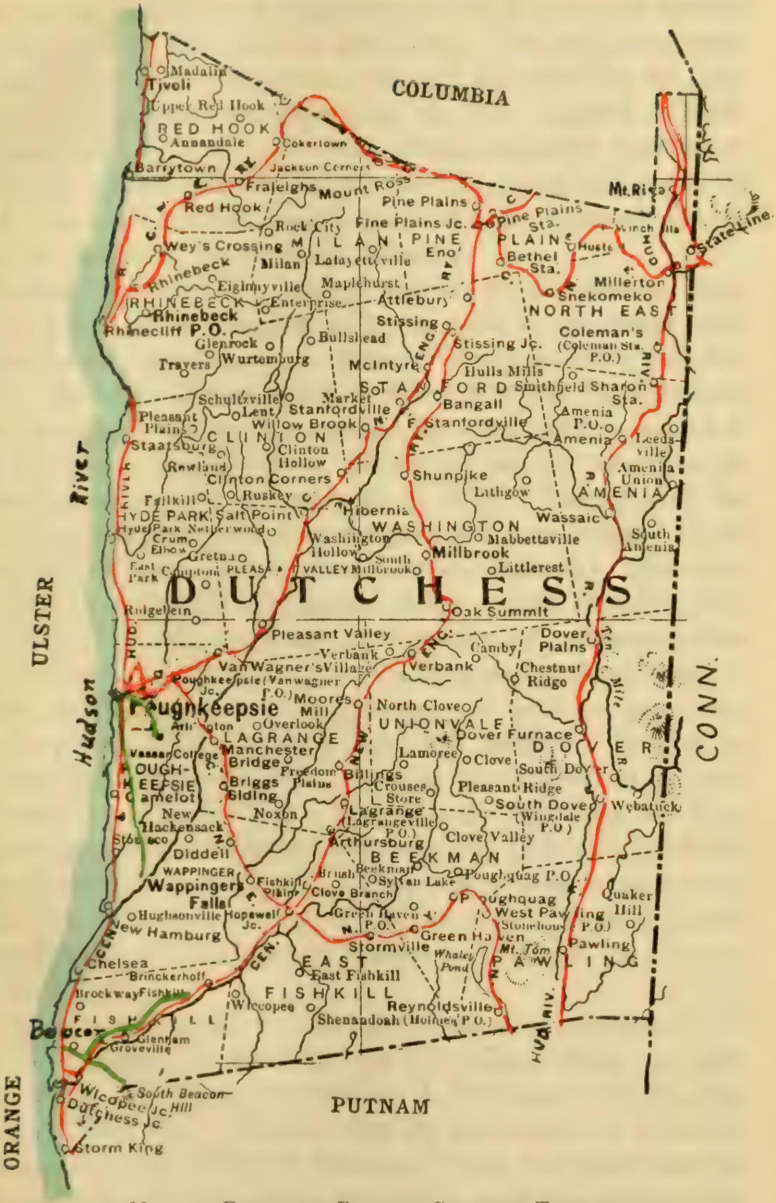
Note.— The present population of Beacon is 10,900; of Poughkeepsie, 35,000.

HISTORICAL ASSOCIATIONS

Dutchess was one of the original counties organized in 1683. Dutchess was named for the wife of James II while she was Duchess of York. The old form of spelling with a "t" has been retained. Besides Putnam County it then included Livingston Manor, which later became a part of Columbia.

Previous to the coming of the whites this section was occupied by the Mohicans or River Indians. The land in Dutchess County was all taken up in large tracts, less than a dozen in number, by men of influence or capital, who undertook "to settle, build up, and cultivate the new country," renting farms at a nominal sum or merely for payment of taxes.

The first settlements were made by the Dutch at Rhinebeck and Fishkill shortly before 1690. Other settlements were made along the river at about 1700, including the present city of



COLUMBIA
ULSTER
ORANGE
PUTNAM
CONN.
Hudson River
DUTCHESS
RED HOOK
MILAN
PINE PLAINS
NORTH EAST
RHINEBECK
CLINTON
STANFORD
AMENIA
HYDE PARK
WASHINGTON
PLEASANT VALLEY
POUGHKEEPSIE
LAGRANGE
UNIONVALE
DOVER
BEEKMAN
WAPPINGER
EAST FISHKILL
FISHKILL
PAWLING
Madalin
Tivoli
Upper Red Hook
Annandale
Barrytown
Cokertown
Jackson Corners
Fraleighs
Mount Ross
Red Hook
Pine Plains
Pine Plains Jc.
Rock City
Wey's Crossing
Milan
Lafayetteville
Eno
Pine Plains Sta.
Bethel Sta.
Mt. Riga
Winchells
Husted
State Line
Millerton
Shekomeko
Rhinebeck
Eiglmyville
Maplehurst
Enterprise
Attlebury
Rhinecliff P.O.
Glenrock
Bullshead
Stissing
Stissing Jc.
Coleman's (Coleman Sta. P.O.)
Travers
Wurtemburg
McIntyre
Hulls Mills
Smithfield
Sharon Sta.
Schultzville
Lent
Market
Stanfordville
Bangall
Stanfordville
Amenia P.O.
Amenia
Leedsville
Pleasant Plains
Willow Brook
Staatsburg
Clinton Hollow
Shunpike
Lithgow
Amenia Union
Rowland
Clinton Corners
Fallkill
Ruskey
Hibernia
Wassaic
Hyde Park
Salt Point
Netherwood
Crum Elbow
Washington Hollow
Mabbettsville
South Amenia
South Millbrook
Millbrook
Gretna
East Park
Clinton
Valley
Littlerest
Rudgefein
Oak Summit
Pleasant Valley
Dover Plains
Verbank
Van Wagner's Village
Camby
Chestnut Ridge
Poughkeepsie (Vanwagner Jc. P.O.)
Moores Mill
North Clove
Poughkeepsie
Arlington
Overlook
Dover Furnace
Vassar College
Manchester Bridge
Lamoree
Clove
Freedom Plains
Billings
South Dover
Camelot
Briggs Siding
Crouses Store
Pleasant Ridge
New Hackensack
Noxon
Lagrange (Lagrangeville P.O.)
South Dover (Wingdale P.O.)
Webatuck
Stoneco
Arthursburg
Clove Valley
Diddell
Beekman
Brush
Sylvan Lake
Poughquag P.O.
Wappingers Falls
Fishkill Plains
Clove Branch
Poughquag
Quaker Hill
Hughsonville
Hopewell Jc.
Green Haven P.O.
West Pawling
New Hamburg
Stonehouse
Pawling P.O.
Green Haven
Stormville
Whaley Pond
Mt. Tom
Chelsea
Brinckerhoff
East Fishkill
Brockway
Fishkill
Wiccopee
Reynoldsville
Beacon
Shenandoah (Holmes P.O.)
Glenham
Groveville
South Beacon Hill
Wicopee Jc.
Dutchess Jc.
Storm King
Ten Mile River

Map of Dutchess County, Showing Townships

Red, railroads; green, electric roads

Poughkeepsie. A considerable number of Palatines were settled at Rhinebeck at about the same time. These people, together with Germans and French Huguenots, helped to settle and develop the section from Rhinebeck to Red Hook. The early settlement of the eastern part of the county through the length of the Harlem valley was made by people from the New England colonies, all that part of New York State being originally claimed as belonging to and embraced within the New England grants of land. A portion of the county was settled on leaseholds, which here, as elsewhere, led to much difficulty.

During the Revolution several sessions of the colonial legislature were held at Poughkeepsie. As soon as the alarm occasioned by the invasion of Sir Henry Clinton in 1777 had subsided, Governor Clinton called a meeting of the legislature at Poughkeepsie. During that session the state gave its assent to the Articles of Confederation. It was in this city also that the Federal Constitution was adopted in 1788. Forty-six of the fifty-seven delegates, including the governor, were opposed to the constitution. Its principal advocates were John Jay, Alexander Hamilton, and Robert Livingston. After debates extending over a period of nearly six weeks the question of ratification was finally carried in the affirmative by a majority of three votes.

The original name of Poughkeepsie is said to have been Apo-keep-sink, which signified "pleasant harbor." In view of the fact that Poughkeepsie has so long been known as the city of schools, it is interesting to note that the first state law "for the encouragement of schools" was passed in 1795 at a legislative session held in Poughkeepsie. This act later became the foundation of the state system of aid to schools and of the state regents. Near this city was the home of Samuel F. B. Morse, the inventor of the telegraph.

The town of Fishkill was the headquarters for a portion of the American army. A dwelling near the village which was then occupied by the officers was used by J. Fenimore Cooper as the scene of "The Spy." Fishkill also has the distinction of having been a temporary capital of the state. Here the State Constitution was printed by Samuel Louden, who when the British occupied New York City, retired with his press to Fishkill, where he completed the work.

DEVELOPMENT OF INDUSTRY

The early agricultural products included grains and flax, sheep and cattle being kept on every farm. In the western part of the county, where grain could be shipped down the Hudson, wheat growing took the lead, and in 1835 over one-third of the grain shipped from the state came from Dutchess County. The eastern part of the county, lacking the advantages of river transportation, developed along other agricultural lines. Grass being abundant, livestock were largely raised and driven down the Harlem valley to New York, seventy miles distant. According to the census of 1840 the staple crops of the county were hay, oats, corn, rye, wheat, buckwheat, barley, and potatoes.

Following the building of railroads, which admitted of quicker transportation for western wheat and beef, there came a decrease in the production of those commodities. In the eastern part of the county sheep raising became prominent, and at about 1870 the principal cash returns, besides that received from the production of steers, was largely from sheep and from the sale of butter. Since that time the sheep business has decreased, partly due no doubt to the decline in prices of wool, as well as to western competition. At the present time dairying has become the principal industry. Efficient methods of handling milk have been developed, thus making it possible to send milk to the New York markets economically and insure its being received in good condition.

Fruit raising, particularly apples, is supplemental to dairying; orchards are numerous, although many of them are small. Some of the best fruit finds its way into the export trade.

Violets are successfully grown, especially in the vicinity of Rhinebeck, and this locality has become widely known because of the superiority of its product.

The manufacture of implements and machinery used on the farm are of importance in the county.

CLIMATE AND RAINFALL

Climatological records for Dutchess County are taken from the station at Wappingers Falls, the elevation of which is 110 feet. The present observer is Oscar R. Widmer.

The average dates for the last killing frost in spring and the first in fall are April 28 and October 10, respectively, giving a growing season of 165 days.

In the following table the records cover the period of 1893 to 1918:

RECORDS OF TEMPERATURE AND PRECIPITATION AT WAPPINGERS FALLS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	25.6	63	1906	—34	1904	3.79	1.80	1905	14.2
February	23.8	60	1916*	—27	1914	3.98	2.05	1896	16.6
March	35.6	80	1910	—12	1916	3.91	2.20	1893	11.0
April	48.3	94	1915	14	1898	3.71	2.62	1901	3.8
May	60.0	98	1914	28	1907	4.42	3.74	1903	T.
June	67.9	97	1899*	40	1918*	4.15	8.16	1903	......
July	73.0	101	1918*	44	1918	4.76	4.32	1908	......
August	70.4	106	1918*	42	1896*	4.75	3.78	1901	......
September	63.4	99	1914	28	1914	3.69	4.90	1899	......
October	52.4	88	1914	22	1904*	4.06	6.12	1903	T.
November	40.2	77	1896	2	1914	3.03	5.74	1898	3.8
December	28.6	66	1908	—23	1917	3.86	2.46	1915	13.9
Year	49.1	106	1918*	—34	1904	48.11	8.16	1903	63.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

From the Hudson River the banks rise rather abruptly, some places being rocky precipices, to a terrace marked by rocky or stony knolls and ridges ranging from 25 to 300 feet high. This terrace forms a belt along the entire course of the river. It is broadest in the town of Red Hook, where it is four or five miles wide, tapering to a point in the extreme southern part of the county. To the east of this terrace the hills or ridges rise 300 feet or more, increasing to a mean elevation of 500 feet, with occasional higher hills.

From the towns of La Grange, Pleasant Valley, and Hyde Park a broad belt of rough, broken country, with occasional well-rounded hills, extends north through the central part of the county to the county line and beyond.

The mountainous part of the county lies along the southern and eastern boundaries. The Fishkill Mountains, which are the northern extremity of the Highlands, begin at the extreme southwest corner of the county. Breakneck Ridge rises abruptly at this point from the Hudson River as a bold promontory and extends south to the highest point on South Beacon, 1,635 feet above the Hudson. Along the eastern border extends the Taconic Mountains, which rise from 300 to 500 feet above the valleys and 1,000 to 1,200 feet above tide. South of Tenmile River is a high, broad, rolling glaciated ridge known as Quaker Hill.

The three main valleys in the county extending from northeast to southwest are as follows: Wappinger valley, which extends entirely through the county from Pine Plains to New Hamburgh; the valley of Fishkill Creek in the towns of Fishkill and East Fishkill, which divides at Hopewell Junction into two forks; and the valley extending the whole length of the county parallel to the eastern boundary and but a few miles distant, occupied by Tenmile River and its tributaries. This valley is really a continuation of the Harlem valley from the south. These valleys are preglacial and are characterized by flat gravelly terraces and by long narrow ridges with frequent outcropping ridges. The pre-glacial valleys have been partially filled, whereby ponds and small lakes or swampy and meadow areas have been formed. The greater part of the streams in the county are tributary to the Hudson of which the principal ones are Crum Elbow, Fallkill, Wappinger, and Fishkill creeks. Numerous small lakes give rise to these streams.

The principal rock formation in the county is Dutchess slate, which crops out on the hills and along the courses of the streams. The soil is generally a fine quality of silt and slate loam, with frequent areas of limestone.

DESCRIPTION BY TOWNSHIPS

AMENIA: The surface is broken and hilly along the eastern border and rolling in the western part. A wide valley extends through the center, the Tenmile River flowing through the southern part. The soil is a silty loam with occasional areas of limestone and gravel along the streams.

Products: Milk and general farm crops.

Average values of farm land range from $40 to $80 an acre.

BEEKMAN: The surface is a rolling upland. Limestone and slate crop out at irregular intervals. The streams are small creeks and brooks tributary to the Fishkill and are bordered by wide, fertile intervales. The soil is silt and limestone formation.

Products: Dairy products, fruit and general farm crops.

Average values of farm land range from $40 to $100 an acre.

CLINTON: The surface is a rolling upland broken by hills in the north and west. Little Wappinger Creek flows south through the center and Crum Elbow Creek forms a portion of the western boundary. Fallkill Creek takes its rise in this town. Several small lakes, the principal of which is Long Pond, lie in the northern part. The soil is mainly a productive slaty loam.

Products: Dairy products, fruit and pork.

Average values of farm land range from $25 to $80 an acre.

DOVER: The east and west borders are occupied by hills and the center by a wide valley. The valley is about 400 feet above tide and the summits of the hills are 500 to 900 feet higher. Tenmile River flows south through the town almost to the southern boundary, then turns east and empties into the Housatonic. A limestone ridge extends north and south through the center of the principal valley. The soil is widely variable in character, including areas of slate and silt loam, limestone, and sandy and gravelly loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $25 to $75 an acre.

EAST FISHKILL: The surface is mountainous in the south and comparatively level in the central and northern portions. The highest points of the Fishkill Mountains in the south are 1,000 to 1,200 feet above tide. The principal stream is the Fishkill Creek. The intervales along the streams are generally wide and bordered by gradual slopes. The soil is limestone and silt and gravelly loam.

Products: Dairy products, fruit and canning factory crops.

Average values of farm land range from $50 to $100 an acre.

FISHKILL: The surface is mountainous in the south and gently rolling in the central and northern portions. The Fishkill Mountains along the southern border are high, rocky, and precipitous. The highest points reach an elevation of 1,500 to 1,600 feet above tide. Fishkill Creek flows southwest through the center of the town, separating the mountains from the hilly region in the northwest. The soil is a silty and gravelly loam and limestone.

Products: Dairy products, fruit and vegetables.

Average values of farm land range from $50 to $100 an acre.

HYDE PARK: The surface is principally a rolling upland. The principal streams are Crum Elbow and Fallkill creeks. The soil is a Dutchess stony loam and gravelly loam.

Products: Dairy products, fruit, pork and poultry.

Average values of farm land range from $25 to $75 an acre.

LA GRANGE: The surface is a rolling and moderately hilly upland. Wappinger Creek forms the western boundary. The soil is silty and slaty loam, with small areas of gravel.

Products: Dairy products, fruit and general farm crops.

Average values of farm land range from $50 to $100 an acre.

MILAN: The surface is a hilly upland broken by the valleys of streams. The slopes are generally gradual and the hills are arable to their summits. Roeliff Jansen Kill crosses the northeast corner. The soil is a slaty loam, with small areas of silt and gravel.

Products: Dairy products, fruit, rye, hay, pork and general farm crops.

Average values of farm land range from $20 to $50 an acre.

NORTH EAST: The surface is a hilly, broken upland. The Taconic Mountains, which extend along the east border, are from 1,000 to 1,200 feet above tide. Wassaic Creek, the principal stream, flows south through the town. The valleys generally have a silty or sandy and gravelly soil.

Products: Dairy products and fruit.

Average values of farm land range from $50 to $80 an acre.

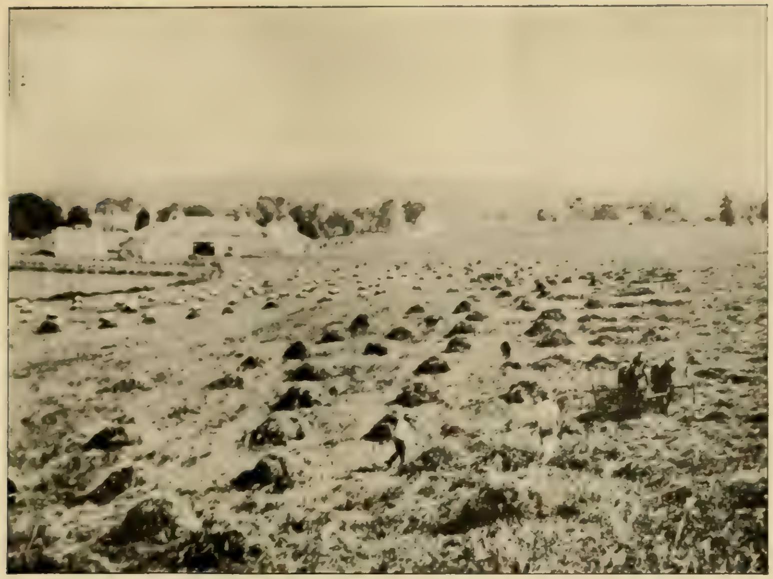


FIG. 61.—View on Farm of J. G. Webb, Clinton Corners

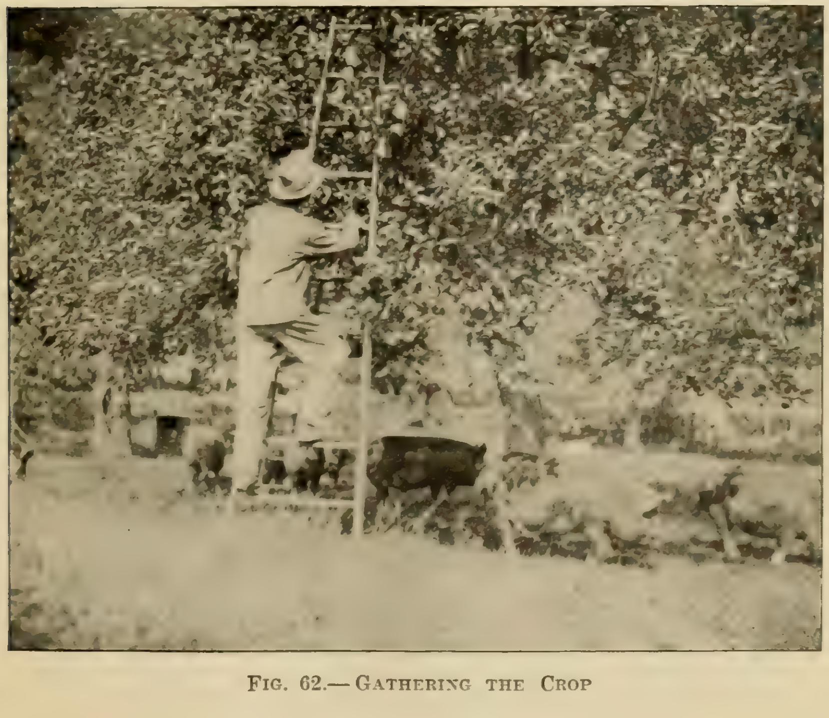


FIG. 62.—Gathering the Crop

PAWLING: Ranges of hills occupy the east and west borders. A broad valley extends through the center. Whaley and Little ponds, the sources of Fishkill Creek, lie near the west border. A ridge of limestone extends from Dover into the northern part. The soil is a silt and sandy loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $50 to $100 an acre.

PINE PLAINS: The surface is a rolling upland, the ridges being separated by broad valleys. Stissing Mountain in the west rises to a height of 1,400 feet. Roeliff Jansen Kill crosses the northwest corner and the Shekomeko Creek flows through the center. Several small ponds lie in the west and south. The soil is generally a productive silt and gravelly loam; there are considerable areas of limestone soil, and occasional patches of slaty loam.

Products: Dairy products.

Average values of farm land range from $25 to $80 an acre.

PLEASANT VALLEY: The surface is a rolling upland. Wappinger Creek flows southwest through the center. The soil is silt and slaty loam.

Products: Dairy products, fruit and pork.

Average values of farm land range from $30 to $100 an acre.

POUGHKEEPSIE: The surface is mostly a rolling upland. Wappinger Creek forms the eastern boundary and Fallkill Creek flows through the center. The soil is a sandy loam with considerable areas of limestone.

Products: Dairy, garden and canning products and fruit.

Average values of farm land range from $100 to $200 an acre.

RED HOOK: The surface is a rolling upland terminating on the Hudson in a series of bluffs 100 to 150 feet high. The eastern part is hilly. The valleys of the streams are broad and their banks are low. The soil along the river is a clayey loam. In other sections it is sandy, gravelly, or slaty loam. Agricultural interests are highly developed and the raising of fruit is of special importance.

Products: Apples, dairy products and violets.
Average values of farm land range from $40 to $200 an acre.

RHINEBECK: The surface is a rolling and moderately hilly upland. The soil is principally a fine quality of sand loam.

Products: Violets, fruit and dairy products.
Average values of farm land range from $30 to $80 an acre.

STANFORD: The surface is a broken, hilly upland. The hills are generally rounded and are arable to their summits. Wappinger Creek is the principal stream. The soil is a good quality of silt and slaty loam.

Products: Dairy products, fruit and rye.
Average values of farm land range from $20 to $60 an acre.

UNION VALE: The surface is a hilly and broken upland divided by the broad valley of Fishkill Creek, known as Clove valley, which extends north and south through the center. The soil is a silt and slaty loam.

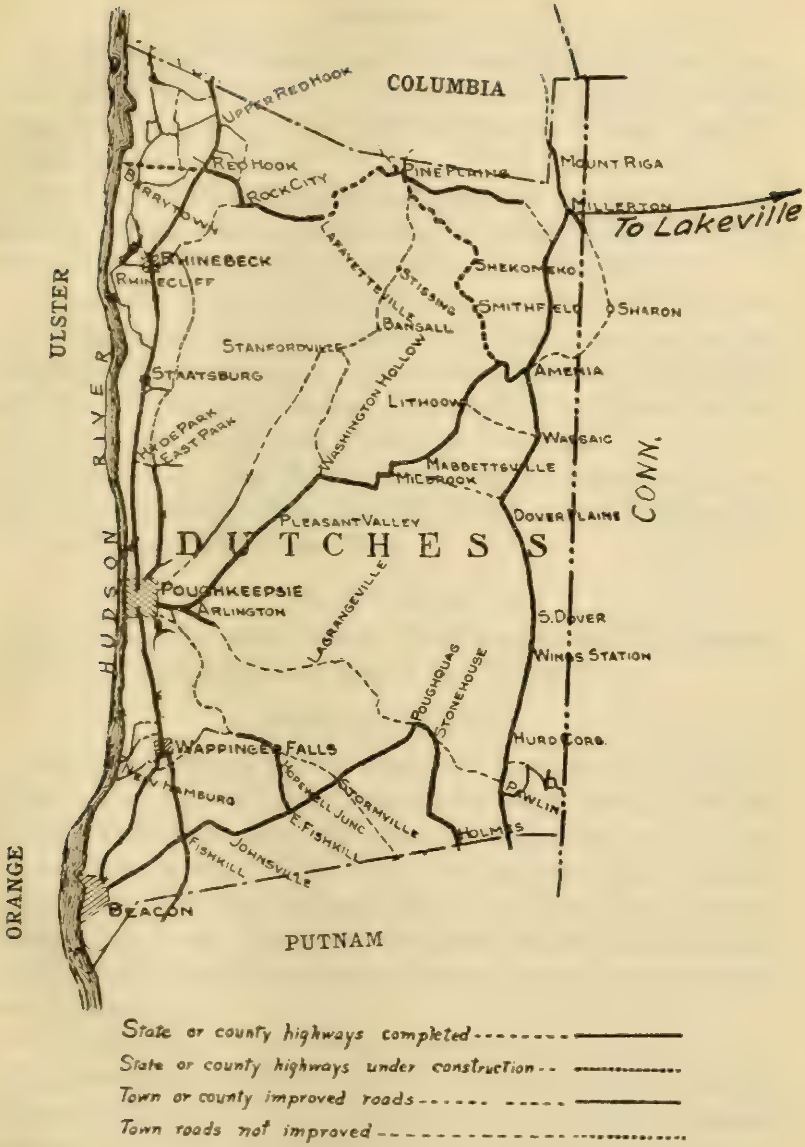
Products: Dairy products and general farm crops.
Average values of farm range from $50 to $100 an acre.

WAPPINGER: The surface is rolling or hilly. Wappinger Creek and Hudson River form the west boundary. The soil is principally a silty loam.

Products: Dairy, canning and market garden products.
Average values of farm land range from $40 to $100 an acre.

WASHINGTON: The surface is a rolling and hilly upland. The streams are small creeks and brooks. Slaty loam and silty loam are the prevailing soil types.

Products: Dairy products, fruit and rye.
Average values of farm land range from $40 to $100 an acre.


COLUMBIA
ULSTER
ORANGE
PUTNAM
CONN.
HUDSON RIVER
DUTCHESS
Upper Red Hook
Red Hook
Rock City
Barrytown
Pine Plains
Mount Riga
Millerton
To Lakeville
Rhinebeck
Rhinecliff
Lafayetteville
Stissing
Shekomeko
Smithfield
Sharon
Bangall
Stanfordville
Staatsburg
Amenia
Lithgow
Washington Hollow
Hyde Park
East Park
Wassaic
Mabbettsville
Millbrook
Dover Plains
Pleasant Valley
Poughkeepsie
Arlington
Lagrangeville
S. Dover
Wings Station
Poughquag
Stonehouse
Hurd Corg.
Wappingers Falls
New Hamburg
Hopewell Junc
Stormville
Pawling
E. Fishkill
Holmes
Fishkill
Johnsville
Beacon
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

MARKETING CONDITIONS

FACILITIES AND TRANSPORTATION

Railroads

The New York Central runs two lines north and south the entire length of the county. The Hudson River division extends along the river on the west and the Harlem division near the eastern border.

The Central New England, entering the county from Connecticut, divides and connects with the New York Central at three points — Rhinecliff, Poughkeepsie, and Beacon.

A line also runs from Poughkeepsie to Hopewell Junction. At Poughkeepsie this road crosses the Hudson over one of the highest bridges in the world. This road subdivides in the northern part of the county, forming a junction at Pine Plains, one line connecting with the Harlem division at Millerton.

The New York, New Haven and Hartford extends from Hopewell Junction through East Fishkill, Beekman, and Pawling into Putnam County and Connecticut.

Electric Roads

An electric line runs between Poughkeepsie and Wappingers Falls, and another between Beacon and Fishkill.

Improved Highways

Improved highways extend north and south the entire length of the county in both the eastern and western parts. That on the east runs from Mt. Riga through Millerton, Amenia, and Dover Plains south to New York. On the west side it forms a part of the state road between Albany and New York, passing through Red Hook, Rhinebeck, Poughkeepsie, Wappingers Falls, and Fishkill. Roads from each of the two places last mentioned run to Beacon.

From Fishkill an improved highway extends east to Stormville, branching northwest at East Fishkill and passing through Hopewell Junction. From Poughkeepsie a short section extends north to East Park and another runs east to Arlington and northeast through Pleasant Valley, Washington Hollow, Millbrook, and Amenia, where it connects with the highway following the railroad through the east side of the county.

A road from Barrytown through Red Hook and Pine Plains connects with the Harlem Valley road south of Millerton.

There are in the county 158 miles of completed improved highways, and 34 miles additional under construction.

Waterways

A considerable amount of freight is carried by the numerous steamboat lines on the Hudson River, by means of which New York and other markets are easily reached. Ferries cross the river from Beacon, Poughkeepsie, and Rhinecliff.

AVAILABLE MARKETS

Poughkeepsie, which is widely known as the seat of Vassar College, the first of women's colleges, is the most important local market. There are several important manufacturing industries in the city, especially those of farm machinery, among which may be included the De Laval separator works and the Moline plow works. The Hudson River State Hospital is located in Poughkeepsie.

Beacon has important manufactories, including fine wool hats, silk, brick, tools, and machinery.

Large quantities of produce are sent to New York, especially milk and fruit. Apples are largely exported, many of them going to England. Violets find a market, not only in New York and other cities of the state, but also in New England and as far west as Chicago.

The greater part of the milk produced in the county is sold in the form of market milk. Some butter and American cheese, also some fancy cheese and condensed milk are manufactured.

There are two canning factories in the county.

The agricultural organizations are as follows:

Charlotte Precinct Fruit Growers' Cooperative Associations, Inc.
Dutchess County Agricultural Society.
Dutchess County Dairymen's League.
Dutchess County Farm Bureau.
Dutchess County National Farm Loan Association.
Dutchess County Sheep Breeders' Cooperative Association, Inc.
Farmers' Cooperative Milk Company, Inc.
Granges: Pomona and twenty-six subordinate granges.
Red Hook Apple Growers' Cooperative Association, Inc.
Silver Lake Cooperative Creamery Company.

EDUCATIONAL FACILITIES

Poughkeepsie is the seat of Vassar College, and St. Stephens College is located at Annandale. Approved courses in agriculture and homemaking are maintained in the Millbrook High School.

Schools registered with the regents as having facilities suitable for maintaining approved courses in high school and academic work are located at Amenia, Beacon, Dover Plains, Hyde Park, Millbrook, Millerton, Pawling, Poughkeepsie, Red Hook, Rhinebeck, Pine Plains, Staatsburg, Madalin, and Wappingers Falls.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	464,202 acres
Number of farms	3,600
Per cent of farm land improved	73.6

LIVE STOCK PRODUCTS

Milk sold	12,942,250 gal.
Cream sold	47,957 gal.
Butter fat sold	431,094 lbs.
Butter produced	434,589 lbs.
Cheese produced	1,824 lbs.
Eggs produced	1,482,737 doz.
Wool produced	7,676 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	10,945
Cattle	48,351
Sheep	14,719
Swine	19,798
Poultry	236,074

BEES

Number of colonies	2,070

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	21,508	744,303
Oats	19,351	468,039
Wheat	1,704	32,920
Barley	35	554
Buckwheat	2,705	54,504
Rye	6,449	80,229

	Acres	Yield
Hay and forage	108,893	122,406 tons

Special crops:		
Potatoes	3,041	300,275 bu.
Vegetables, other than potatoes	1,679	....
Dry edible beans	6	71 bu.
Dry peas	10	200 bu.

Fruits:		
Apples	303,015 trees	794,753 bu.
Peaches and nectarines	63,741 trees	30,132 bu.
Pears	34,870 trees	23,805 bu.
Plums and prunes	14,690 trees	10,731 bu.
Cherries	7,097 trees	3,474 bu.
Quinces	1,242 trees	382 bu.
Grapes	72,594 vines	585,356 lbs.
Small fruits	214 acres	591,877 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,420	2,979

LIVE STOCK AND POULTRY

Horses and mules	9,372	8,164
Cattle	43,144	40,807
Sheep	8,769	6,914
Swine	13,165	8,609
Poultry	264,856	209,020

BEES

Number of colonies	2,455	3,493

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	14,076	19,647	360,008
Oats	19,081	16,878	501,962
Barley	242	441	4,207
Buckwheat	3,102	5,393	59,747
Wheat (winter)	2,537	2,929	34,795
Wheat (spring)	280	419	4,216
Rye	5,396	4,426	53,024

	1917	1918	
	Acres	Acres	Yield
Hay and forage:			
Alfalfa	1, 440	1, 132	1, 553 tons
Other hay	92, 840	86, 276	127,237 tons
Corn (ensilage)	9, 576	10, 265	73, 053 tons
Corn (fodder)	....	1, 739	....
Special crops:			
Field beans	157	441	2, 953 bu.
Cabbage	219	196	175 tons
Potatoes	3, 488	3, 933	248,230 bu
Roots raised for stock food	....	324	....
Canning factory crops	82	76	....
Other vegetables and garden crops	1, 193	1, 716	....
Fruits:			
Apples	13,132	13,948	797,415 bu.
Peaches	953	1,027	20,086 bu.
Pears	1,045	954	20,396 bu.
Plums	146	171	33,515 lbs.
Cherries	211	228	65,858 lbs.
Quinces	....	25	47 bu.
Vineyard	282	278	348,629 lbs.
Small fruits	355	609	....

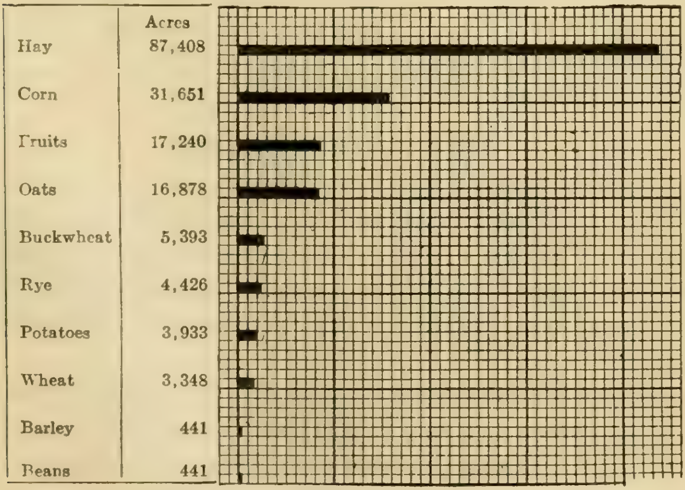


FIG. 63.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN DUTCHESS COUNTY

ERIE COUNTY

This county lies in the western part of the state, and is bordered on the west by Lake Erie and the Niagara River. It has an area of 661,760 acres. The extent from north to south is approximately 40 miles, and from east to west 25 miles.

The population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

Buffalo (city)*	454,630
Lackawanna (city)	15,737
Tonawanda (city)	9,147
Alden	2,866
Amherst	5,389
Aurora	5,446
Boston	1,489
Brant	2,854
Cheektowaga	9,405
Clarence	3,082
Colden	1,390
Collins	2,653
Concord	4,570
East Hamburgh	3,004
Eden	2,616
Elma	2,282
Evans	3,644
Grand Island	964
Hamburgh	7,374
Holland	1,584
Lancaster	11,730
Marilla	1,409
Newstead	4,023
North Collins	2,705
Sardinia	1,661
Tonawanda	3,062
Wales	1,197
West Seneca	5,926
Total	571,897

---

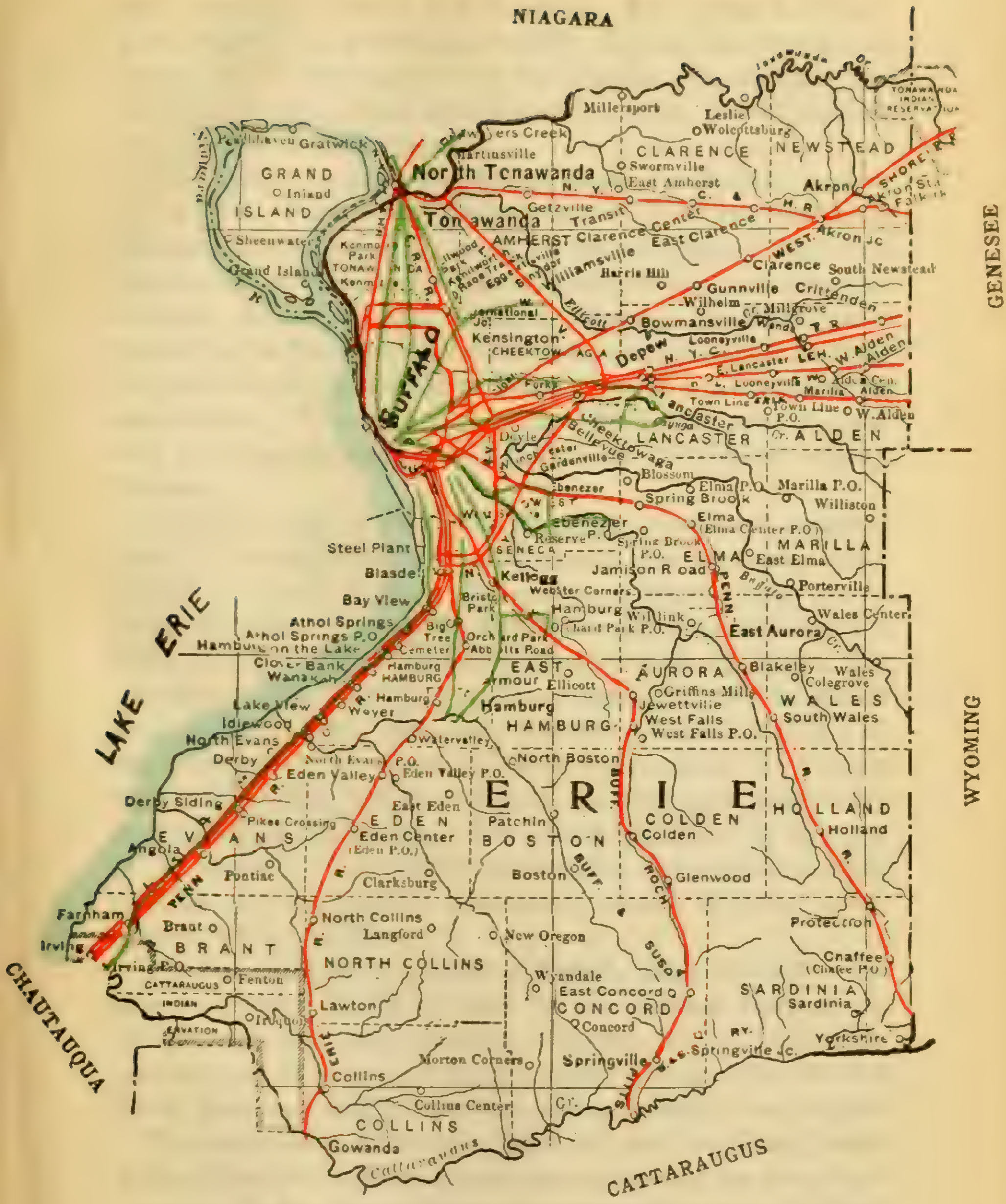
* Buffalo is the county seat.

Note: The present population of Buffalo is 506,700; of Lackawanna, 17,900; of Tonawanda, 10,000.

HISTORICAL ASSOCIATIONS

Erie County was formed from Niagara in 1821. The name comes from a Huron word said to mean "at the place of the panther." With the exception of the Indian reservation in the southwestern part and the "mile strip" along Niagara River, Erie County was included in the grant to the Holland Land Company.

When LaSalle built his little vessel in the Niagara River he found this section occupied by the Seneca Indians. The French erected a fort at Niagara, which the Indians destroyed. After the English constructed a fort at Oswego, fortifications at Niagara became especially important to the French. Each nation realized that the people in possession of both forts would hold absolute


NIAGARA
GENESEE
WYOMING
CATTARAUGUS
CHAUTAUQUA
LAKE ERIE
ERIE
GRAND ISLAND
CLARENCE
NEWSTEAD
AMHERST
BUFFALO
LANCASTER
ALDEN
ELMA
MARILLA
AURORA
WALES
EAST HAMBURG
HAMBURG
EVANS
EDEN
BOSTON
COLDEN
HOLLAND
BRANT
NORTH COLLINS
CONCORD
SARDINIA
COLLINS
North Tonawanda
Tonawanda
Akron
Depew
East Aurora
Springville
Gowanda

Map of Erie County, Showing Townships

Red, railroads; green, electric roads; brown, canals

sway over Lake Ontario and, therefore, of the great fur trade. Fort Niagara was accordingly rebuilt. During the French and Indian War it was captured by the English, who assumed control of the Niagara River after it had been under French domination for more than 100 years.

The Indians became discontented under the English control, and in 1763, Pontiac, a celebrated Ottawa chief with whom the Senecas were in sympathy, went on the war path. The other Indian nations were loyal to the English, through the powerful influence of Sir William Johnson. General Bradstreet, who started for the West to quell the outbreak, met Johnson at Oswego, and together they proceeded to Niagara, where a treaty of peace was effected. From this time to the Revolution peace reigned over the Niagara frontier, and trade with the Indians rapidly increased.

In the few years preceding the Revolution, settlement advanced very little beyond the various trading posts, every one being intent on making a profit in furs to the neglect of clearing away forests and tilling lands. During the Revolution the frontier of western New York had little immediate connection with the events that transpired, although the post at Fort Niagara was very important in a military sense. There the Butlers, Johnsons, Brant, and others opposed to the colony had their headquarters. It was not until July 4, 1796, that Fort Niagara and other posts were finally surrendered by the British. Previous to that time the relations of the people on either side of the boundary had not been cordial, and the peculiar situation undoubtedly tended to retard settlement at various points.

The first settlement was made at Buffalo, about 1794–95. The generous outlays of money made by the Holland Company in the construction of roads, bridges, mills, etc., led to a rapid occupation of all the best land in the county. In the War of 1812 Black Rock and Buffalo were captured and Buffalo was burned.

The construction of the Erie Canal and the New York Central Railroad tended largely to develop the resources of the county and to convert Buffalo into the greatest commercial place on the Great Lakes.

A portion of the Tonawanda Indian Reservation lies in the northeastern part of the county and a portion of the Cattaraugus Reservation in the southwest.

The Thomas Indian School is maintained by the state within the Cattaraugus Reservation.

DEVELOPMENT OF INDUSTRY

The period from 1850 to the breaking out of the Civil War was one of remarkable prosperity in Erie County, with the exception of the year 1857, during which the whole section suffered from a financial panic. As an illustration of increasing prosperity in the county during the decade 1850-60, grain shipments from the West to Buffalo increased from 3,600,000 bushels of wheat to 18,500,000 bushels. The receipts of corn advanced from 2,500,000 to 11,300,000 bushels.

Farmers in the surrounding country also prospered. Their crops were uniformly good and their market always open. Agricultural methods began to change at about this time. Notwithstanding the general improvement, the quantity of grain raised in the county did not increase, owing to the fact that farmers were beginning to appreciate the importance of dairying, which, including the manufacture of cheese, has since become so large a factor in their business; they also found it more profitable to produce hay, potatoes, and truck crops for the Buffalo market.

Dairying, which is also important in the north and east, is especially prominent in the southern towns, Concord having 4,400 cows. Clarence and Newstead lead in the number of sheep, and Amherst, Cheektowaga, and North Collins in the number of hogs. Erie County stands first in the state in number of poultry, Concord and Clarence leading with about 20,000 fowls each. There are some very large poultry farms in the vicinity of East Aurora.

The eastern part produces large quantities of beans, Marilla taking the lead with 3,200 acres. In 1917 Erie County also stood first in the production of small fruits, which are grown extensively around Buffalo and in the southwestern part of the county. Potatoes and canning factory crops are important products. Truck gardening is extensively followed in the vicinity of Buffalo, but few sections in this state excelling in amount of garden products. In the central part near East Aurora, and in the southern part near Springville, Chaffee, and Sardinia, maple sugar is produced in large quantities.

Commercial interests, as well as the manufacture of iron and steel, are of vast importance in the county.

CLIMATE AND RAINFALL

Climatological records for Erie County are taken from those of the local weather bureau office in Buffalo, which is at an elevation of 1,000 feet above Lake Erie.

Average dates for the last killing frosts in spring and the first in fall are May 1 and October 25, giving a growing season of 177 days.

In the following table the temperature records cover a period of 44 years and the precipitation records 56 years, ending with 1917. Both normal and extreme temperatures and precipitation are shown.

RECORD OF TEMPERATURE AND PRECIPITATION AT BUFFALO

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	25.2	70	1906	—14	1884	3.36	2.02	1896	20.8
February.....	23.7	67	1906	—13	1895	2.99	1.76	1872	18.6
March........	31.4	79	1905	—4	1885	2.70	1.50	1900	10.1
April.........	42.5	84	1899	11	1881	2.56	1.94	1903	4.1
May.........	54.4	94	1911	28	1891	3.12	2.15	1894	0.3
June.........	64.7	93	1895	39	1891	2.86	3.28	1885	......
July..........	69.9	95	1911	47	1898	3.25	3.56	1896	......
August.......	68.6	95	1914	44	1880	3.06	4.25	1893	......
September....	62.7	95	1900	35*	1878	3.03	2.36	1875	......
October......	51.3	86	1898	24	1887	3.48	3.10	1881	0.5
November....	39.2	71	1913	2	1875	3.21	2.53	1871	5.7
December.....	29.6	64	1901	—9	1880	3.31	2.53	1878	16.0
Year.........	46.9	95	1914*	—14	1884	36.89	4.25	1893	75.9

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is level in the north, rolling in the center, and hilly in the south. A flat region, much of it marshy, lies along Tonawanda Creek and occupies the greater part of the northern tier of towns. This low region is bounded on the south by a limestone terrace 20 to 60 feet high extending from Black Rock east through the southern part of Amherst, Clarence, and Newstead. A nearly level region extending south from the summit of this ridge embraces the city of Buffalo and the towns of Cheektowaga, Lancaster, and Alden, and terminates in the rolling region which occupies the entire central part of the county. The ridges in the center and south have a general north and south direction, rising gradually toward the south, their highest summits attaining an elevation of 1,400 to 1,600 feet above tide. The highlands are divided into several distinct ridges by the valleys of Cazenovia and Eighteenmile creeks. The slopes of the hills are generally long and gradual, although in some places the banks bordering the streams are very steep. The land along the lake is low and level in the north, rising in the south in steep banks from twenty to fifty feet high. Niagara River, which forms a portion of the western boundary of the county, is divided by Grand Island into two nearly equal branches. Several other islands in the Niagara River are within the limits of this county.

The principal streams in the county are Ellicott, Cayuga, Buffalo, Eighteenmile, and Cazenovia creeks. Tonawanda Creek forms the northern, and Cattaraugus Creek the southern, boundary of the county.

The soil in the north is generally a clay loam interspersed with beds of marl and muck. Further south it is a clayey and gravelly loam resting on limestone. In he south the soil on the hills is drift, principally clay and gravel. In the valleys it is generally a gravelly loam and alluvium.

DESCRIPTION BY TOWNSHIPS

ALDEN: The surface in the west is level, and gently undulating in the east. The soil is deep and fertile, and is generally sandy, gravelly, and clayey loam.

Products: Potatoes, corn, beans, hay and dairy products.
Average values of farm land range from $60 to $125 an acre.

AMHERST: The surface is level. Tonawanda Creek forms its northern boundary, and smaller creeks flow across the town in a northeasterly direction. The soil is a sandy, clayey loam. The southern part of the town is largely occupied by commuters or country homes of Buffalo residents. In other parts considerable truck gardening in connection with farming is carried on.

Products: Wheat, corn, hay, oats, apples and vegetables.

Average values of farm land range from $90 to $110 an acre.

AURORA: The surface is rolling in the north, and hilly in the south. The hills are gradual slopes, the summits of which rise from 1,000 to 1,100 feet. The principal streams are Cazenovia Creek and its branches. The soil is gravelly loam in the valleys and clayey among the hills.

Products: Potatoes and other vegetables, hay and grain.

Average values of farm land range from $65 to $150 per acre, except in the northern part, where land values are higher, owing to the fact that it is a commuter's section.

BOSTON: The surface is a hilly upland, broken by the north branch of Eighteenmile Creek, the valley of which is about three-fourths of a mile wide. In this valley the soil is a fine fertile loam; on the hills it is a gravelly and clayey loam. This town is especially famous for the growing of strawberries.

Products: Vegetables, hay, grain and dairy products.

Average values of farm land range from $40 to $105 an acre.

BRANT: The surface is generally level, with a gentle inclination toward the lake. Cattaraugus Creek forms a part of the southern boundary. A number of smaller creeks flow through the town. The soil is generally a gravelly loam intermixed with clay. In 1918 one farm in this town produced 100 tons of beans.

Products: Grapes, berries (largely raspberries and strawberries), beans, tomatoes, potatoes and corn.

Average values of farm land range from $150 to $300 an acre.

CHEEKTOWAGA: The surface is level and is drained by several small streams. The soil is largely a heavy clay.

Products: Hay, corn, oats and potatoes.

Average values of farm land range from $60 to $75 an acre.

CLARENCE: The surface is level. A limestone terrace about fifty feet high extends east and west through the center of the town. The streams are Tonawanda Creek on the northern border, and Ransom Creek, which flows northwest through the center. The soil in the northern part is clayey, and in the south it is a sandy and gravelly loam, underlaid by limestone.

Products: Hay, wheat, oats, corn, potatoes, beans and cabbage.

Average values of farm land range from $40 to $125 an acre.

COLDEN: The surface is an elevated upland, rolling in the east and hilly in the west. The west branch of Cazenovia Creek flows through the western part of the town, and is bordered by steep slopes 150 to 200 feet high. The soil is gravelly loam intermixed with clay.

Products: Hay, grain, vegetables and dairy products.

Average values of farm land range from $30 to $100 an acre.

COLLINS: The surface is a rolling upland sloping gradually to the west and descending abruptly to Cattaraugus Creek on the south. The ridges rise from 150 to 300 feet above the valleys. Clear Creek and its tributary flow through narrow valleys. The soil is a clayey loam on the uplands and a gravelly loam along the streams.

The Gowanda State Hospital is located in this town.

Products: Dairy products, hay, oats, corn and potatoes.

Average values of farm land range from $40 to $100 an acre.

CONCORD: The surface is a rolling upland with steep slopes bordering Cattaraugus Creek. Townsend Hill, the highest point, is nearly 1,500 feet above tide. The principal streams are Cattaraugus Creek and its tributaries. In the southern part the soil is a gravelly loam, and in the north it is a clayey loam underlaid by hardpan. Dairying is very prominent in this town.

Products: Dairy products, hay, oats, corn and potatoes.

Average values of farm land range from $30 to $100 an acre.

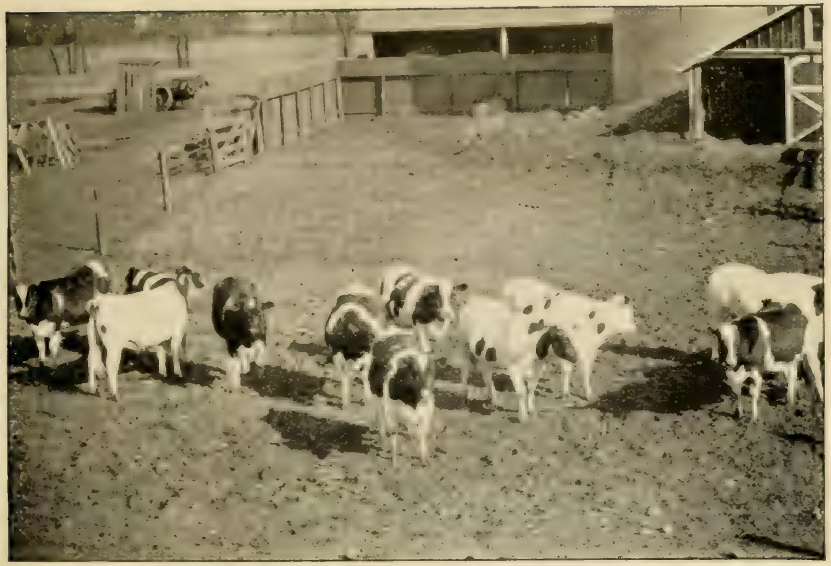


FIG. 64.— TWO-YEAR-OLD DAUGHTERS OF RAG APPLE KORNDYKE 8TH, RAISED ON PINE GROVE FARMS, ELMA CENTER, ERIE COUNTY

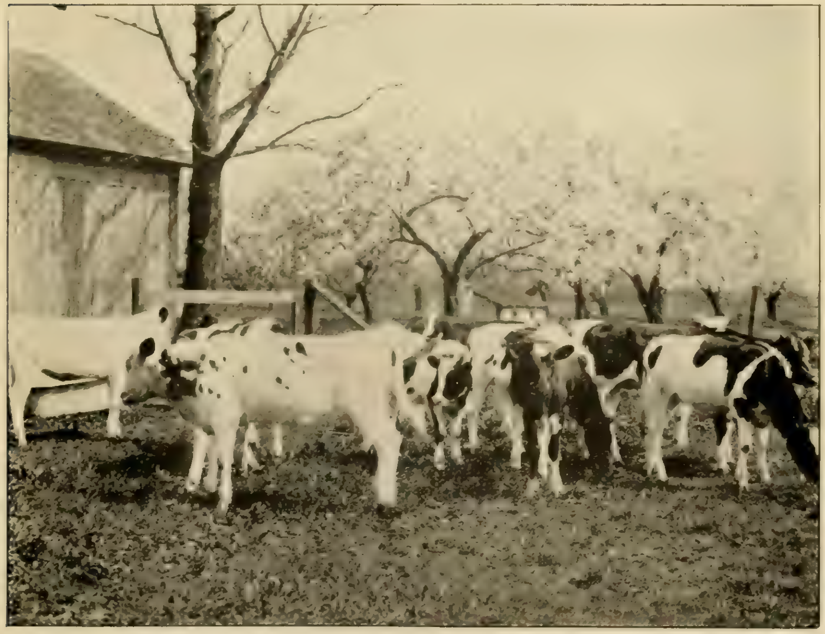


FIG. 65.— YOUNG STOCK AND ORCHARD AT GOWANDA STATE HOSPITAL

EAST HAMBURG: The surface is a broken upland. Chestnut Ridge, the highest land in the town, has an elevation of about 500 feet above Lake Erie, which is 573 feet above sea level. The slopes of the hills are generally gradual. The soil is a gravelly loam in the north and a clayey loam in the south.

Products: Garden products, grapes, grain, potatoes and fruit.

Average values of farm land range from $60 to $125 an acre.

EDEN: The surface is hilly and broken in the east, and level in the west. A ridge about 500 feet above the lake extends along the eastern border. The principal streams are Eighteenmile Creek and its branches. The soil is a gravelly loam intermixed with clay. This town leads in market gardening.

Products: Vegetables, potatoes, oats, hay and grapes.

Average values of farm land range from $50 to $300 an acre.

ELMA: The surface is gently rolling, the highest ridges rising 800 to 950 feet. Buffalo and Cazenovia creeks flow through the town. The soil in the north is a clayey loam; in the south it is a gravelly loam. Pine Grove farms are located in this town, where some of the largest producing cows in the county may be found.

Products: Dairy products, vegetables, potatoes, hay and grain.

Average values of farm land range from $50 to $100 an acre.

EVANS: The land rises from Lake Erie in a bluff twenty to forty feet high. The highest part of the town near the eastern border is 160 feet above the lake. The soil is a sandy and gravelly loam intermixed with clay. The large sheep farm, owned by Stewart R. Mann of Derby, lies in this town.

Products: Grapes, oats, corn, potatoes, hay and fruit.

Average values of farm land range from $60 to $100 an acre. Land values are much higher along the lake shore, where the land is largely given over to summer resorts.

GRAND ISLAND: The surface is nearly level. The soil in the southern part is clay, and sandy in the north.

Products: Vegetables, potatoes, hay and grain.

Average values of farm land range from $20 to $100 an acre.

HAMBURG: The surface in the east is rolling; in the west it is nearly level, with a general inclination toward the lake, where the shore rises in a bluff from 50 to 100 feet high. The principal stream is Eighteenmile Creek. The soil is generally a clay loam, the southeastern portion being gravelly.

Products: Garden products, grapes, oats, corn, potatoes, hay and fruit.

Average values of farm land range from $60 to $100 an acre.

HOLLAND: The surface is a high, broken upland divided by the valley of Cazenovia Creek. The highlands rise about 900 feet above Lake Erie. The soil is a gravelly loam occasionally intermixed with slate and clay. It is very fertile in the valley of Cazenovia Creek.

Products: Dairy products, hay, oats, corn, buckwheat and wheat.

Average values of farm land range from $20 to $60 an acre.

LANCASTER: The surface is generally level. Cayuga and Ellicott creeks are the principal streams. The soil is a clayey and gravelly loam. In the village of Lancaster are several large manufacturing interests, including Lagoon Cutler works.

Products: Wheat, potatoes, hay, corn and cabbage.

Average values of farm land range from $75 to $100 an acre.

MARILLA: The surface is rolling. Although Buffalo Creek crosses the southwestern corner, the principal part of the town is drained by the headwaters of Little Buffalo Creek. The soil in the northeast and southwest is a sandy, gravelly loam; elsewhere it consists of clay and muck.

Products: Potatoes, dairy products and beans.

Average values of farm land range from $25 to $100 an acre.

NEWSTEAD: A limestone terrace extends through the center of the town. North of this terrace the surface is level, marshy in some places. The principal stream is Murder Creek. The soil is a clayey loam intermixed with marl and sand. To the south the surface is level or gently undulating, and the soil is a sandy and clayey loam underlaid by limestone.

Products: Potatoes, corn, beans, hay, dairy products.

Average values of farm land range from $50 to $125 an acre.

North Collins: The surface is rolling, the ridges rising 200 to 300 feet above the valleys. The town is watered by the head branches of Eighteenmile, Clear, and other creeks. The streams generally flow through deep ravines. The soil is a gravelly loam.

Products: Beans, vegetables, corn and dairy products, with raspberries and strawberries in the western part.

Average values of farm land range from $50 to $200 an acre.

Sardinia: The surface in the eastern part is gently rolling, and hilly in the west. Shepherd Hill, southwest of the center, rises 1,040 feet above Lake Erie. Cattaraugus Creek forms the southern boundary. In the eastern part the soil is a gravelly loam; in the west it is clay underlaid by hardpan. Dairying is very prominent in this town.

Products: Dairy products, hay, corn, potatoes, oats, buckwheat and rye.

Average values of farm land range from $50 to $100 an acre.

Tonawanda: The surface is generally level. Tonawanda Creek flows along the northern boundary and Niagara River on the west, Ellicott Creek crossing the northern part of the town. The soil along Niagara River is clayey; in the interior it is sandy. Much of this town is occupied by homes of people residing or employed in the city of Buffalo.

Products: Wheat, corn, hay, oats, potatoes and vegetables.

Average values of farm land range from $50 to $100 an acre.

Wales: The surface is broken and hilly, with an inclination toward the north. The principal stream is Buffalo Creek. The soil in the north is a gravelly loam; in the south it is clay underlaid by hardpan.

Products: Dairy products, corn, potatoes, oats, wheat and hay.

Average values of farm land range from $25 to $100 an acre.

WEST SENECA: The surface is gently undulating in the east and level in the west, sloping to the shore of Lake Erie. The principal streams are Buffalo and Cazenovia creeks. The soil is generally a sandy loam.

Products: Garden products, fruit, potatoes, and grain.

Average values of farm land range from $60 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

All parts of the county are traversed by railroads centering at Buffalo and connecting with points in all the neighboring counties. Those extending north and east are the New York Central; Erie; Lehigh Valley; and Delaware, Lackawanna and Western railroads; the Erie also extends south into Pennsylvania. Other lines running south are the Pennsylvania and the Buffalo, Rochester and Pittsburgh. The New York, Chicago and St. Louis, and the Lake Shore and Michigan Southern extend along the lake shore and to points west; other connections to the west are made through Canada.

Electric Roads

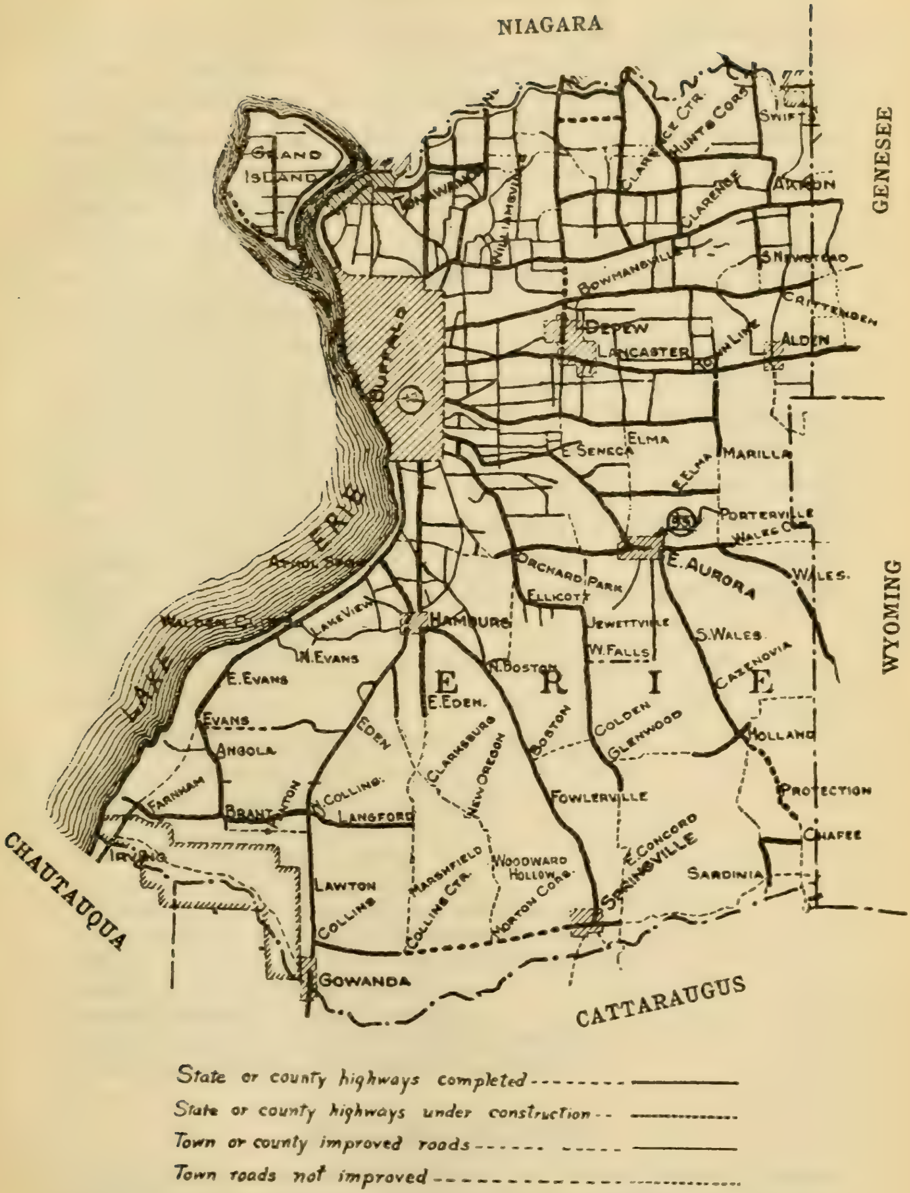
The electric lines of Erie County center at Buffalo, one of these extending from Buffalo north to Niagara Falls and through Lockport to Lake Ontario; two lines extend east to Lancaster and another to Williamsville in the town of Amherst. West Seneca and East Hamburg are traversed by the Buffalo Southern. Two lines extend to the village of Hamburg, and the Buffalo and Lake Erie Traction Railway runs along the lake shore to Erie, Pa.

Waterways

The Barge Canal traverses the northwestern part of the country, and the western part has all the advantages afforded by shipping facilities on the lakes.

Improved Highways

Erie County is favored in having an excellent system of roads, every township being reached by an improved highway. The county has 317 miles of completed improved highways, with 40 miles additional under construction.


NIAGARA
GENESEE
WYOMING
CATTARAUGUS
CHAUTAUQUA
LAKE ERIE
E R I E
GRAND ISLAND
TONAWANDA
WILLIAMSVILLE
CLARENCE CTR.
HUNTS CORS.
SWIFTS
AKRON
CLARENCE
BOWMANSVILLE
S. NEWSTEAD
CRITTENDEN
DEPEW
LANCASTER
BOWMANSVILLE
ALDEN
BUFFALO
E. SENECA
ELMA
MARILLA
E. ELMA
PORTERVILLE
WALES CTR.
E. AURORA
WALES
ORCHARD PARK
ELLICOTT
ATHOL SPRS.
LAKEVIEW
WALDEN CL.
HAMBURG
JEWETTVILLE
W. FALLS
S. WALES
COZENOVIA
N. EVANS
E. EVANS
N. BOSTON
E. EDEN
EVANS
EDEN
ANGOLA
CLARKSBURG
NEW OREGON
BOSTON
COLDEN
GLENWOOD
HOLLAND
FARNHAM
BRANT
N. COLLINS
LANGFORD
FOWLERVILLE
PROTECTION
CHAFEE
IRVING
E. CONCORD
SPRINGVILLE
SARDINIA
LAWTON
COLLINS
MARSHFIELD
COLLINS CTR.
WOODWARD HOLLOW
NORTON CORS.
GOWANDA
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

MAP SHOWING IMPROVED HIGHWAYS

Available Markets

Buffalo, by virtue of its situation, has vast commercial enterprises. It has become not only the greatest grain depot in the world, but also one of the largest cattle markets. Electric power from Niagara Falls is used extensively, and manufactures of various kinds are important. Buffalo is the seat of a state hospital and of a state normal school.

Lackawanna, which is a great iron and steel manufacturing center, and Tonawanda, a railroad center and lake port, are both excellent local markets.

About 183,000,000 pounds of milk is collected annually by the various milk establishments. Considerable market milk is sold in Buffalo and in New York. In 1919 the county produced more creamery butter than any other county in the state, quantities of cream for that purpose being shipped into the county. Over two and a quarter million pounds of American cheese is made, besides considerable Swiss, brick, Italian and Greek cheese. About 32,000,000 pounds of condensed and evaporated milk is also manufactured.

Six canning factories are located in different parts of the county.

The agricultural organizations are as follows:

Chautauqua and Erie Grape Company.
Collins Center Cooperative Dairy Association.
Erie County Agricultural Society.
Erie County Dairymen's League.
Erie County Farm Bureau Association.
Erie County Growers' and Shippers' Association.
Erie County Sheep Growers' Cooperative Association, Inc.
Granges: Pomona and twenty-one subordinate granges.
Jersey Cattle Club of Erie County, Elma.
Niagara Frontier Fanciers' Association.
Poultry Producers' Association of Collins Center.
South Shore Growers' and Shippers' Association.

EDUCATIONAL FACILITIES

Buffalo is the seat of the University of Buffalo and of Canisius and D'Youville colleges and the Martin Luther Seminary. An approved course in agriculture is given at Alden.

Schools registered with the regents as having facilities suitable for maintaining approved courses in high school and academic work, are located at Akron, Alden, Angola, Blasdell, Collins Center, Depew, East Aurora, Eden, Gardenville, Springville, Hamburg, Holland, Kenmore, Lackawanna, Lancaster, North Collins, Orchard Park, Clarence, Sardinia, Buffalo (2), Tonawanda, and Williamsville.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	571,386 acres
Number of farms	8,178
Per cent. of farm land improved	76.1

LIVE STOCK PRODUCTS

Milk sold	16,391,934 gal.
Cream sold	11,076 gal.
Butter fat sold	1,082,351 lbs.
Butter produced	636,829 lbs.
Cheese produced	142,251 lbs.
Eggs produced	2,313,762 doz.
Wool produced	4,927 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	20,839
Cattle	66.564
Sheep	9,502
Swine	23.364
Poultry	377,098

BEES

Number of colonies	5,195

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	16,942	588,563
Oats	52.789	1,384.876
Wheat	18,340	355,870
Barley	1,098	23,061
Buckwheat	7.477	169.673
Rye	3,346	55,579

	Acres	Tons
Hay and forage	132,529	207,202

Special Crops:	Acres	Yield
Potatoes	23,587	3,014,450 bu.
Vegetables, other than potatoes	10,270	....
Dry edible beans	1,240	17,787 bu.
Dry peas	69	1,152 bu.

Fruits:		
Apples	472,932 trees	623,234 bu.
Peaches and nectarines	10,987 trees	3,858 bu.
Pears	70,056 trees	31,327 bu.
Plums and prunes	25,301 trees	10,580 bu.
Cherries	29,483 trees	10,534 bu.
Quinces	4,524 trees	1,229 bu.
Grapes	1,141,278 vines	10,638,840 lbs.
Small fruits	1,603 acres	3,070,452 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	8,098	6,662

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	19,863	16,728
Cattle	61,629	54,450
Sheep	9,397	4,535
Swine	15,888	14,828
Poultry	404,602	304,407

BEES

	1917	1918
Number of colonies	3,170	3,634

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	8,276	7,902	76,557
Oats	34,885	43,176	1,197,079
Barley	1,293	1,461	22,050
Buckwheat	10,194	9,196	151,938
Wheat (winter)	25,017	17,491	252,860
Wheat (spring)	308	1,219	14,412
Rye	2,647	3,442	36,535

Hay and Forage:	1917	1918	
	Acres	Acres	Yield
Alfalfa	2,036	1,873	3,954 tons
Other hay	119,656	107,641	160,825 tons
Corn (ensilage)	13,909	11,952	53,122 tons
Corn (fodder)	....	3,980	....

	1917	1918	
Special Crops:	Acres	Acres	Yield
Field beans	6,143	9, 235	46, 547 bu.
Cabbage	1,038	1, 319	5, 054 tons
Potatoes	17, 738	15, 839	1, 163, 359 bu.
Roots raised for stock food	....	419	....
Canning factory crops	2, 560	2, 716	....
Other vegetables and garden crops	3, 672	4, 961	....
Fruits:			
Apples	10,390	10, 254	31, 818 bu.
Peaches	288	496	1, 508 bu.
Pears	891	821	18, 636 bu.
Plums	347	780	70,712 lbs.
Cherries	271	191	31, 535 lbs.
Quinces	....	51	3,259 bu.
Vineyard	4, 089	7, 441	6, 790, 424 lbs.
Small fruits	1,874	3, 978	....

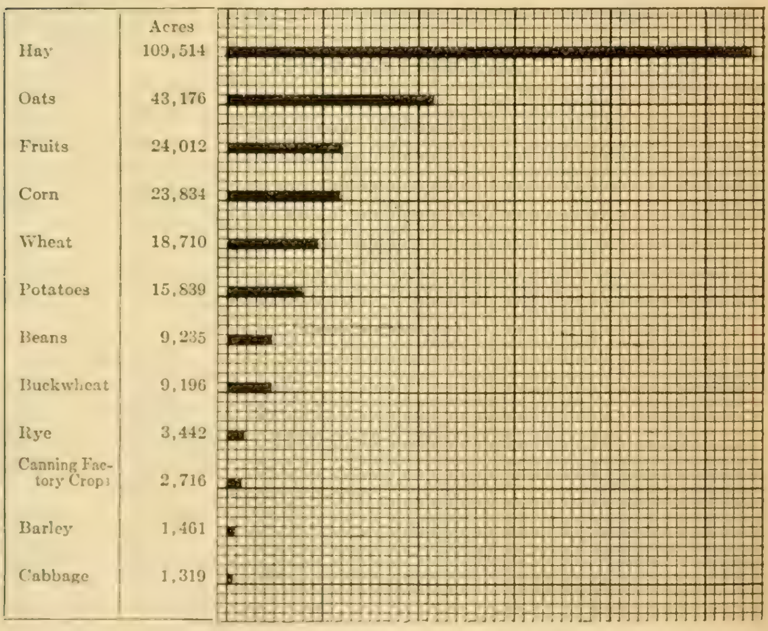
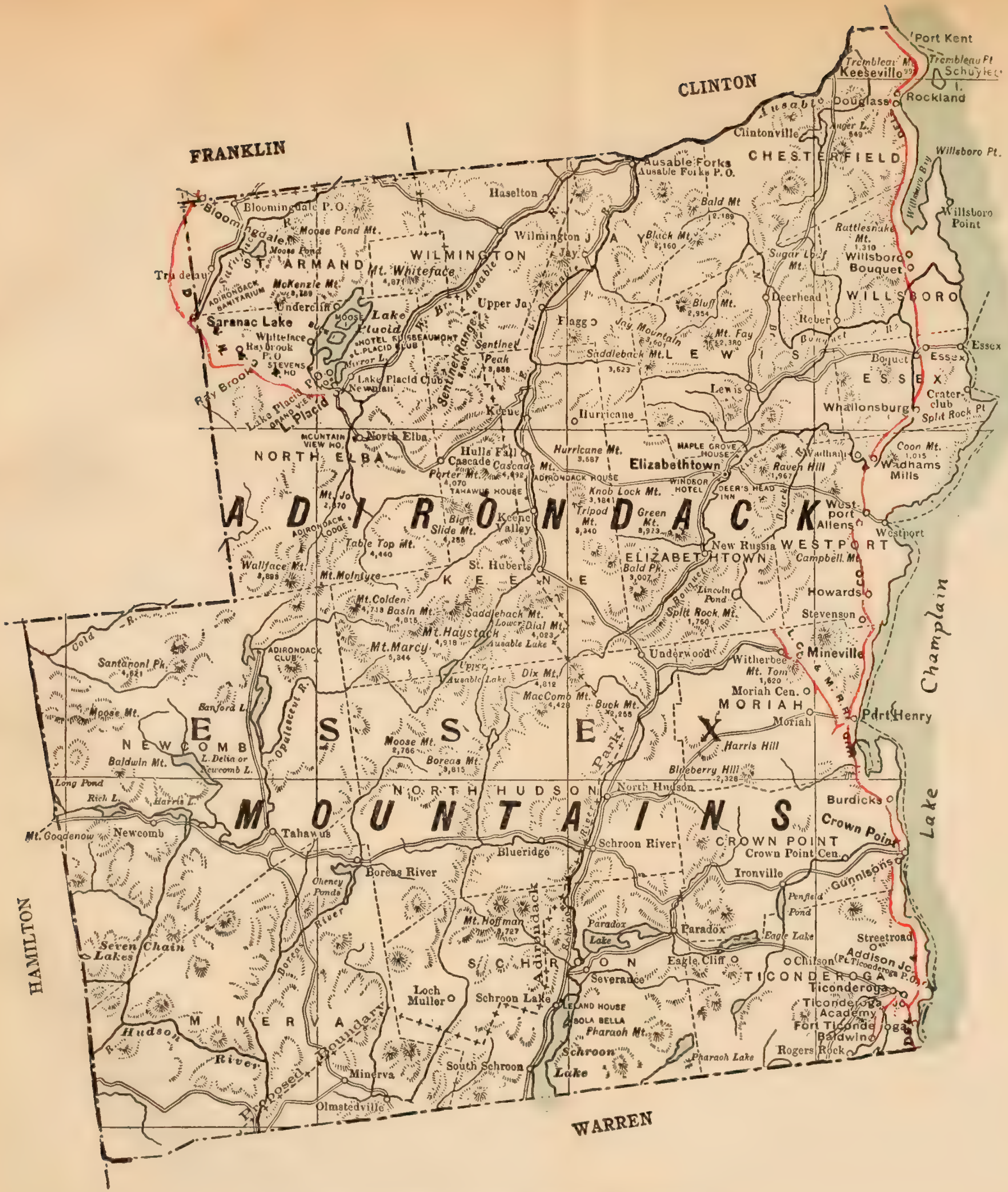


FIG 66.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN ERIE COUNTY


CLINTON
FRANKLIN
HAMILTON
WARREN
Port Kent
Trembleau Pt
Keeseville
Schuyler I.
Douglass
Rockland
Clintonville
Ausable Forks
Ausable Forks P.O.
CHESTERFIELD
Willsboro Pt.
Willsboro Point
Haselton
Bloomingdale P.O.
Bloomingdale
Moose Pond Mt.
Moose Pond
Trudeau
ST. ARMAND
WILMINGTON
Wilmington
JAY
Jay
Mt. Whiteface
McKenzie Mt.
Adirondack Sanitarium
Undercliff
Saranac Lake
Whiteface
Raybrook P.O.
Stevens Ho
Ray Brook
Lake Placid
Mirror L.
Hotel Ruisseaumont
Lake Placid Club
Newman
Upper Jay
Flagg
Sentinel Peak
Sentinel Range
Saddleback Mt.
Bald Mt
Black Mt.
Bluff Mt.
Jay Mountain
Mt. Fay
Sugar Loaf Mt.
Rattlesnake Mt.
Willsboro
Bouquet
WILLSBORO
Deerhead
Reber
Essex
ESSEX
LEWIS
Lewis
Whallonsburg
Crater club
Split Rock Pt
Keene
Hurricane
Mountain View Ho.
North Elba
NORTH ELBA
Hulls Fall
Cascade
Cascade Mt.
Porter Mt.
Hurricane Mt.
Maple Grove House
Elizabethtown
Wadhams
Wadhams Mills
Coon Mt.
Raven Hill
Adirondack House
Windsor Hotel
Deer's Head Inn
Knob Lock Mt.
Tahawus House
Mt. Jo
Adirondack Lodge
Big Slide Mt.
Keene Valley
Tripod Mt.
Green Mt.
Westport
Allens
New Russia
WESTPORT
Campbell Mt.
ADIRONDACK
Table Top Mt.
Wallface Mt.
Mt. McIntyre
St. Huberts
KEENE
ELIZABETHTOWN
Bald Pk.
Lincoln Pond
Howards
Split Rock Mt.
Stevenson
Mt. Colden
Basin Mt.
Saddleback Mt.
Lower Ausable Lake
Dial Mt.
Mt. Haystack
Mt. Marcy
Upper Ausable Lake
Adirondack Club
Santanoni Pk.
Underwood
Witherbee
Mineville
Mt. Tom
Moriah Cen.
MORIAH
Moriah
Port Henry
Dix Mt.
MacComb Mt.
Buck Mt.
Sanford L.
Moose Mt.
Opalescent R.
ESSEX
NEWCOMB
Baldwin Mt.
L. Delia or Newcomb L.
Moose Mt.
Boreas Mt.
Harris Hill
Blueberry Hill
Long Pond
Rich L.
Harris L.
NORTH HUDSON
North Hudson
Burdicks
MOUNTAINS
Champlain
Lake
Mt. Goodenow
Newcomb
Tahawus
Schroon River
CROWN POINT
Crown Point
Crown Point Cen.
Blueridge
Boreas River
Cheney Ponds
Ironville
Gunnisons
Penfield Pond
Seven Chain Lakes
Mt. Hoffman
Paradox
Paradox Lake
Eagle Lake
Streetroad
Addison Jc.
SCHROON
Eagle Cliff
Chilson (Pt. Ticonderoga P.O.)
TICONDEROGA
Severance
Ticonderoga
Ticonderoga Jc.
Ticonderoga Academy
Fort Ticonderoga
Baldwin
Loch Muller
Schroon Lake
Leland House
Sola Bella
Pharaoh Mt.
Pharaoh Lake
Rogers Rock
Schroon Lake
MINERVA
Hudson River
Proposed Boundary
Minerva
South Schroon
Olmstedville
Adirondack Park
Gold R.

MAP OF ESSEX COUNTY, SHOWING TOWNSHIPS

Red lines indicate railroads

ESSEX COUNTY

Essex County lies in the northeastern part of the state, just below the northern tier of counties, Lake Champlain separating it from the state of Vermont on the east. The area is 1,175,040 acres. From north to south the county extends approximately 47 miles, and from east to west 40 miles. Population is distributed as follows:

Population by Townships

(Census of 1915)

Chesterfield	1,865
Crown Point	1,605
Elizabethtown *	1,205
Essex	1,193
Jay	2,382
Keene	1,138
Lewis	844
Minerva	705
Moriah	6,007
Newcomb	511
North Elba	3,933
North Hudson	477
St. Armand	952
Schroon	967
Ticonderoga	4,746
Westport	1,686
Willsboro	1,652
Wilmington	593
Total	32,461

---

* Elizabethtown, in the town of Elizabethtown, is the county seat.

HISTORICAL ASSOCIATIONS

Essex County was formed from Clinton in 1799, when it included also a section that was added to Franklin on the organization of that county. The name was derived from Essex County, England.

Few authentic traces of permanent Indian occupation of this territory have been discovered. Its history properly begins in 1609, the year in which Hudson first sailed up to the present site of Albany, when Samuel Champlain, inspired with a love of adventure and the desire to explore a new country, allied himself with a band of Canadian Indians, who were about to start on an expedition against their enemies, the Iroquois. Landing within the present limits of Essex County, on the shore of the lake that now bears his name, they came on a band of Mohawks. Hostilities opened at once, and Champlain fired a shot, killing one of their number. By this act he incurred the enmity of the Iroquois, which ultimately proved fatal for the interests of France in the New World.

The whole region bordering on the lake was claimed by both France and England, hence it became the great battle ground for supremacy, and the principal highway for war parties in their incursions on the defenseless frontier settlements. The French commenced settlement in various places along the lake. These settlements made considerable progress and thriving villages had sprung up before they were finally laid waste by the invading armies. During the French and Indian War in 1759, the whole region came into the undisputed possession of the English. The forts of Ticonderoga and Crown Point, which had been erected by the French, were enlarged and strengthened. At the outbreak of the Revolution a small body of troops —"The Green Mountain Boys" under Colonel Ethan Allen — surprised and captured both. The British later recaptured the forts and the whole settlement was broken up by Burgoyne. Even after the war was closed settlement progressed but slowly for some time.

In the town of North Elba is the farm formerly owned by John Brown, of Harpers Ferry fame, now the property of the state. It was while a resident of North Elba that he conceived the idea of liberating the slaves.

DEVELOPMENT OF INDUSTRY

At this early period the manufacture of lumber and staves and export to Quebec formed the leading, and in some neighborhoods almost the only, industry. Rafts of great size were formed along the lake shore and guided to the Richelieu River and down to Quebec, where they were transferred to ships for English markets. The lumber interest reached its greatest activity between 1830–40. Later it began to decline, many turning their attention to agriculture and improved methods of farming, and during the next twenty-five years agriculture advanced rapidly.

Tanning, which received considerable attention at an early date, became less important as the bark supply diminished.

After the Civil War iron mining received increased attention, as did also iron and graphite manufacturing and the use of wood pulp in the manufacture of paper. With the development of these interests came demand for further internal improvements, especially for those facilitating travel and transportation, which resulted in building railroads and improved highways.

Along Lake Champlain the early farmers raised wheat extensively. Rye and corn were also produced.

Present-day farmers produce hay, potatoes, oats, barley, buckwheat, and spring wheat, ranking in the order named. Hay is the principal crop along the Champlain Lake front. Limestone soil being abundant throughout the county, legumes thrive particularly well. In the northern part, altitude, climate and soil are well suited to oats and peas, largely used for silage. Experiments prove beyond a doubt that alfalfa can be profitably grown in every township of the county.

The largest dairy interests are in the towns of Ticonderoga, Crown Point, Moriah, Westport, Essex, Willsboro, and Jay. Although North Elba is mostly forest-covered, it has the thirty-six Lake Placid Club farms, seven of which are provided with excellent modern dairy equipment. The principal live stock industry, however, is that of sheep raising; out of approximately 2,300 farmers in Essex County, about 600 are owners of sheep.

It is conceded that McIntosh Red and other hardy varieties of apples reach greater perfection of color and flavor in the Champlain valley than in any other section of the United States, climate and other conditions being very favorable for their production.

Potatoes, which frequently yield 300 bushels per acre, are also profitably produced. The Lake Placid Club raises 10,000 bushels yearly, and their seed potatoes have an excellent reputation.

After a survey from Maine to Michigan, the United States government established the first and only government experimental fur farm in Essex County. Several private fur farms are now successfully operated, notably near Keeseville and Lake Placid.

CLIMATE AND RAINFALL

In Essex County the meteorological station is located at Lake Placid Club, at an elevation of 1,864 feet. The present observer is Henry M. Hoffer.

The average dates for the last killing frost in spring and the first in fall are June 10 and September 5, respectively, giving a growing season of 87 days.

In the following table the records for average temperatures and precipitation cover the period 1897 to 1900 and 1909 to 1918; the remaining records cover the latter period only:

RECORD OF TEMPERATURE AND PRECIPITATION AT LAKE PLACID CLUB

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	14.1	51	1916	—37	1914	4.24	1.21	1913	31.5
February	13.6	53	1918	—36	1914	3.22	1.15	1910	28.2
March	23.6	65	1918*	—23	1911	3.92	2.00	1910	27.6
April	36.2	78	1913	—10	1911	3.24	1.10	1918	14.6
May	48.2	87	1918	17	1911	3.31	1.82	1910	4.0
June	55.1	85	1915	25	1918	3.34	1.60	1910	0.1
July	62.3	92	1911	31	1914	4.49	3.02	1912	......
August	59.3	91	1918	29	1918	3.24	3.52	1918	......
September	52.4	85	1909	18	1914	3.12	1.72	1912	0.2
October	43.1	76	1909	12	1914	3.22	2.19	1918	4.9
November	29.2	64	1918	—7	1917*	3.28	1.84	1915	18.6
December	17.2	55	1918	—39	1917	3.42	1.63	1915	30.7
Year	37.9	92	1911	—39	1917	42.04	3.52	1918	160.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The mountains in this county attain the highest elevation in the state, the highest being Mt. Marcy, 5,467 feet. Taking into consideration the great number of lofty peaks, they surpass in magnitude all other groups east of the Mississippi. Excepting the upper portions of the loftier peaks, the mountains are generally covered with forests. The original forests still remain in a portion of the western part of the county.

The southwestern part is largely drained by the Hudson and its principal branch, the Schroon River. The main stream of the West Branch of the Ausable rises very near one of the springs in which the Hudson has its source. In the extreme south of Keene the Boquet River also rises among the mountains. The Saranac River flows northeast across the extreme northwest corner of the county. The waters of the streams, lakes and ponds come chiefly from cold, pure springs.

Fish are abundant in many streams and lakes, and the whole region is frequented by sportsmen. Millions of trout are added to the streams annually from the state hatcheries at Saranac Inn. Lakes Champlain and George lie partly within the county.

The lakes, which lie in chasms, are generally long and narrow, presenting a great variety of wild and picturesque scenery. These form great attractions for tourists, as do also Indian and Avalanche passes, Wilmington and Cascade notches and Ausable Chasm. Deposits of valuable minerals are found, and iron mines are extensively worked.

Although Essex is by far the most mountainous county in the state, still among its mountains in certain sections are quite extensive valleys, their surfaces at a high elevation, level or gently undulating, are well adapted to cultivation. Along some of the streams and along Lake Champlain are alluvial flats of great fertility. Keene valley and the valleys of Jay, North Elba, and the Boquet deserve this mention.

DESCRIPTION BY TOWNSHIPS

CHESTERFIELD: The surface generally is broken and mountainous. The southeastern part is hilly and in the northeast is a rolling tableland with light, sandy, unproductive soil. Less than half the town is susceptible of cultivation, but it is richly endowed in water power. The north boundary is formed by the Ausable River, a remarkable stream as regards its fall and scenery. The town is rich also in minerals, among which are iron, graphite, sandstone, and a peculiar pale brown marble.

Products: Potatoes, corn, oats, barley, beans, buckwheat, rye, wheat, and apples.

Average values of farm land range from $5 to $75 an acre.

CROWN POINT: A strip of nearly level land about four miles wide extends along the lake shore. The central part of the town is broken, the hills gradually rising into the Kayaderosseras Mountains in the west. The principal stream is Putnam Creek, which rises in mountain ponds. In its course are numerous falls, furnishing abundant water power. The soil on the lake shore is a deep, rich, clayey loam, with limestone subsoil. In the interior it is of a light character. The town possesses numerous iron ore deposits. Iron mining was formerly the leading industry but has been abandoned. There are also numerous beds of natural phosphate of lime, and graphite and colored marble.

Products: Corn, oats, barley, dairy products, potatoes, timothy, clover, alfalfa, apples, pears, plums, cherries and currants.

Average values of farm land range from $25 to $100 an acre.

ELIZABETHTOWN: The surface is mountainous and rugged, not over one-fourth of the town being susceptible of profitable cultivation. Hurricane Mountain, on the northwest border, is the highest peak, 3,687 feet. Numerous small streams drain the town and furnish water power in various localities. The principal part of the arable land of the town lies in the valley of the Boquet. The soil is a sandy or gravelly loam, generally light, except in the valleys, where it is fertile. Extensive deposits of iron ore are found in the town.

Products: Grain, hay and potatoes.

Average values of farm lands range from $30 to $60 an acre.

ESSEX: The surface is rolling in the east and mountainous in the west. A formation known as the terraces of Lake Champlain is very marked in Essex. These terraces run nearly parallel with the shore and can be traced for miles into the interior. Water power is abundant. Black River limestone crops out in this town and is used for building and for manufacture of lime. In the southern part of the town is found a very valuable deposit of rose quartz of a superior quality adapted to manufacture and finishing of china and stoneware. The soil is a clayey loam on the lake and light, sandy loam among the mountains. Some of the finest farms on Lake Champlain are in this town.

There are annually exported quantities of hay, beans, wool, and butter.

Other products: Corn, oats, apples, potatoes and alfalfa.

Average values of farm lands range from $25 to $100 an acre.

JAY: The surface is elevated and broken by lofty and precipitous mountains. Along the west border extends the Ausable

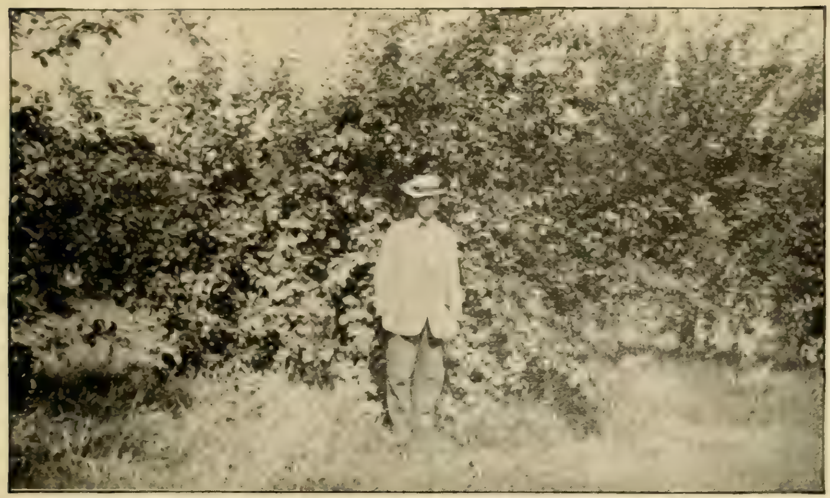


FIG. 67.— ORCHARD OWNED BY FRED L. PORTER, CROWN POINT, ESSEX COUNTY

This photograph was taken eleven years after the trees were planted.

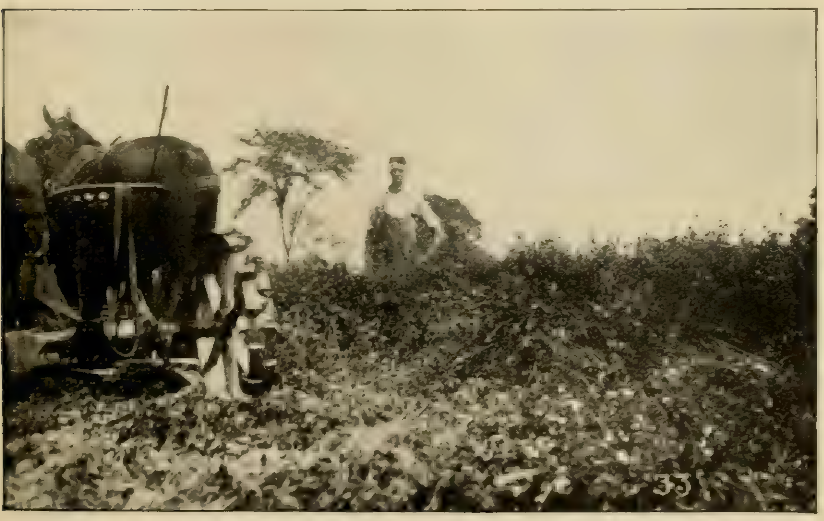


FIG. 68.— SECOND CUTTING OF ALFALFA ON FARM OF D. W. CRAWFORD, ESSEX COUNTY, SEVEN YEARS AFTER SEEDING. YIELD, OVER TWO TONS CURED HAY PER ACRE

Mountains, where Mounts Clark, Hamlin, and Bassett, all reaching an elevation of more than 2,000 feet, are the highest points. The extreme south contains a number of the Adirondack peaks, rising to heights of more than 3,000 feet, wild and picturesque, and surpassed in grandeur by few sections of the entire county. The East branch of the Ausable River is the principal stream. The soil is chiefly a light, sandy and gravelly loam, which in the valleys is vigorous and fertile. On the tablelands, which extend in parallel ridges through the entire town, the soil is highly productive. Iron is abundant and there are small veins of black lead.

Products: Corn, oats, potatoes, hay, alfalfa, buckwheat, fruit and garden products.

Average values of farm land range from $10 to $50 an acre.

KEENE: The surface is almost entirely occupied by the Adirondack Mountains, leaving but little arable land. Keene has most of the loftiest peaks in the state. The highest is Mt. Marcy, 5,344 feet in height. Others are Skylight, Haystack, Basin, Gothic and Colden, varying in height in the order named from 4,920 to 4,738 feet. A number of beautiful lakes lie at the foot of some of these mountains. The Hudson River rises in this town at the foot of Mt. Marcy. Iron is found in numerous veins along the Ausable River. The valley is very narrow and subject to freshets.

Products: Potatoes, hay and oats.

Average values of farm land range from $20 to $75 an acre.

LEWIS: The surface is rough and broken by precipices, hills, and narrow valleys. Less than half the territory embraced within the limits of this town is susceptible of cultivation. Saddleback and Jay mountains are the most prominent peaks in the northwest. Numerous beds of iron ore have been found. The soil is a sandy and gravelly loam.

Products: Alfalfa, hay, corn, oats and potatoes.

Average values of farm land range from $25 to $60 an acre.

MINERVA: The surface is a high, broken upland bordered by mountain ridges on the northwest and southeast. The intermediate portion is hilly with a mean elevation of 1,200 to 1,500 feet above tide. The Hudson River flows through the town. Several small lakes and swamps lie among the hills. The soil is generally cold and hard and only moderately productive.

Products: Hay, potatoes, buckwheat, corn and oats.

Average values of farm land range from $20 to $50 an acre.

MORIAH: The land rises quite abruptly from the lake and reaches its greatest elevation on the western border of the town. The surface is broken to such an extent that there are few level areas of any considerable extent. Less than one-half of the surface is susceptible of profitable cultivation. Numerous small lakes lie in the western part. The finest iron ore deposits east of Michigan are found in this town and are worked on an extensive scale. The mining and smelting of iron ore is the dominating industry of the town. Mineville is famed for its extensive iron ore workings. Profitable markets are available for all farm produce.

Products: Hay, grain, potatoes and other vegetables.

Average values of farm land range from $25 to $70 an acre.

NEWCOMB: The surface is elevated, rugged and broken, the Boquet Range extending through the center of the town and occupying more than half its entire surface. The principal peaks are MacIntyre (5,112 ft.), Santanoni (4,621 ft.) and Panther (4,448 ft.). Although the greater part presents a forbidding aspect, some of the slopes and elevated valleys comprise small tracts of good soil and are capable of very successful cultivation. As in all this region, there are many beautiful lakes and many small streams of clear spring water among the mountains. Tributaries of the Hudson and Raquette rivers drain the town. The iron beds near Lakes Sanford and Henderson are among the most extensive in the world and are of excellent quality; but, on account of their remoteness from transportation, they are not being worked.

Products: Hay, potatoes, corn, oats and buckwheat.

Average value of farm land range from $20 to $50 an acre.

NORTH ELBA: The surface is a hilly upland in the west center and a rolling tableland in the east center known as the " Plains of Abraham" and containing large tracts of sandy soil. In the south, east, and northeast the town is broken and mountainous, MacIntyre Mountain lying on its south border. The altitude of the town is greater than any other cultivated lands in the state. The Ausable River flows through the east and branches of the Saranac and Raquette through the west, while the south is drained principally by branches of the Hudson. Bordering the rivers in many places may be found alluvial formations of rich, black soil. The noted Adirondack, or Indian Pass, is situated on the boundary between this town and Newcomb. Lake Placid, a favorite Adirondack resort, lies in the northern part. Lumbering was formerly the principal industry, but is now secondary to the entertainment of vistors in search of health and pleasure. There are iron ore deposits in this town, but they have not been worked for years. Ray Brook Sanitarium, which is maintained by the state, is midway between Lake Placid and Saranac Lake.

Products: Potatoes, hay, alfalfa, oats and peas.

Average values of farm land range from $20 to $100 an acre.

NORTH HUDSON: The surface is extremely mountainous and rugged. The Boquet Mountains occupy the central and western portions, the highest peak being Mt. Dix, 4,842 feet in height, on the north border. The Schroon Mountains traverse the eastern border. There are numerous small lakes in the town. The soil is a light, sandy loam and not more than one-eighth of the surface is arable.

Products: Hay, grain and potatoes.

Average values of farm land range from $25 to $60 an acre.

ST. ARMAND: The surface is rolling and broken, the ridges extending northeast and southwest. The highest peaks rise from 3,200 to 3,900 feet above tide. The principal drainage is through the Saranac River. Moose Creek, a tributary, flows through Moose Pond, a small lake covering about 200 acres. Considerable swamp land lies in the western part of the town. The soil is largely gravel and sand, frequently diversified by patches of loam, and tracts of choice farming land are numerous. The Adirondack

Cottage Sanitarium, founded by Dr. Edward Trudeau, is on the west border, adjoining Saranac Lake.

Products: Potatoes, hay and grain.

Average values of farm land range from $20 to $60 an acre.

SCHROON: The surface is broken by the Schroon Range in the west and northwest, and in the southeast by the Kayaderosseras Range. Mt. Pharaoh, the highest peak in the latter range, is over 3,000 feet above tide. Hoffman Mountain in the north rises 3,715 feet. Between these elevated ranges and extending from the center of the town is a beautiful and fertile valley, through which flows Schroon River, broadening into the lovely Schroon Lake. The soil in the valleys is of a rich, alluvial character, and in the elevated parts a thin, sandy loam. Nearly half of the town is capable of cultivation, although perhaps not more than one-third can be successfully and profitably worked. Iron ore and black lead or graphite are found in some parts. The town is popular as a summer resort.

Products: Hay, grain and potatoes.

Average values of farm land range from $25 to $60 an acre.

TICONDEROGA: A plateau extending several miles through the northwestern part of the town reaches back from Lake Champlain. A valley about six miles long and one mile wide runs centrally south to the shores of Lake George. Mountains cover nearly half the territory, chiefly in the western and northern parts. About three-fourths of the town is arable. The outlet of Lake George, the principal stream, descends 150 feet in its course of one and one-half miles. As the water never freezes and as its quantity remains much the same throughout the year, it furnishes one of the most valuable waterpowers in the state. The soil is stiff clay on the lake, clayey loam in the center, and a sandy loam in the western part. This town is rich in minerals, chief products being iron and graphite.

Products: Alfalfa, hay, grain, dairy products and apples.

Average values of farm land range from $40 to $100 an acre.

WESTPORT: A range of mountains extends northeast and southwest through the town and occupies nearly all of the western half. A wide valley extends west from Northwest Bay and completely separates the highlands at Split Rock into two parts. The Boquet River drains the northern part. About half of the surface is arable. The soil is clayey along the lake shore and sandy among the mountains. The Adirondack medicinal springs, a cluster of four fountains, are in this town.

Products: Alfalfa, hay, grain, oats, potatoes and beans.

Average values of farm land range from $35 to $100 an acre.

Willsboro: The surface is low and level, or gently sloping in the east and growing more and more broken toward the Boquet Mountains in the west. The Boquet River flows through the southeastern corner. East of the river the soil is clay and in the west it is a sandy loam. The falls of the Boquet River furnish excellent waterpower. Iron is found in some places, and Black River limestone appears, from which both quicklime and waterlime are obtained.

Products: Alfalfa, hay, corn, oats, barley, beans, grapes and apples.

Average values of farm land range from $10 to $100 an acre.

Wilmington: The western branch of the Ausable River flows in a northeasterly direction nearly through the center of this town, and forms the drainage of an extensive valley stretching with an irregular surface between two parallel ranges of the Ausable Mountains, which in the south rise to an elevation of 3,500 or 3,700 feet. The western range culminates in Mt. Whiteface, 4,870 feet above tide. From the summit of Whiteface can be had one of the finest views in northern New York. The famous Wilmington Notch lies in this town, as does also Copperas Pond, so named because its waters are strongly impregnated with sulphate of iron. The town is very popular as a summer resort. The soil is a sandy and gravelly loam and, where it can be cultivated without danger from frequent floods and overflows, is very fertile and productive. Beds of iron ore are numerous, but only slightly worked.

Products: Hay, rye, corn, oats and potatoes.

Average values of farm land range from $10 to $50 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads and Waterways

The main line of the Delaware and Hudson extends the entire length of the eastern border, connecting at Fort Ticonderoga with the Rutland Railroad, which extends into Vermont and to points east. A branch of the Delaware and Hudson leaving the main line in Clinton County, runs west and south, finally entering the northwestern part of Essex County and terminating at Lake Placid. Ausable Forks is also reached by a branch extending through Clinton County, and another branch in the southeastern part of Essex County extends to Ticonderoga and Baldwin. The Lake Champlain and Moriah line extends from Port Henry northwest through the town of Moriah to Mineville. At Port Kent a short line extends west to Keeseville. Lake Champlain affords valuable steamboat service along the eastern border.

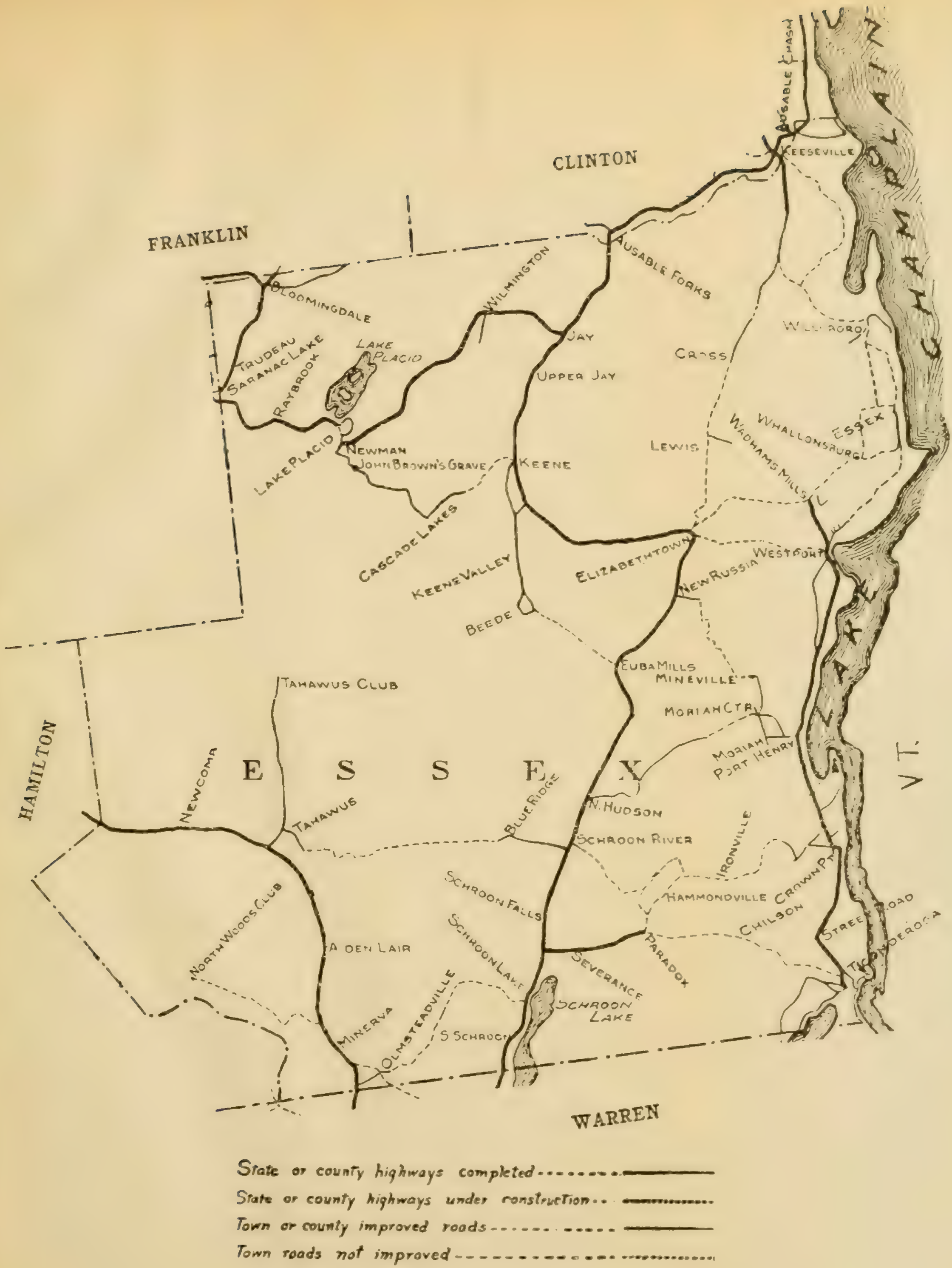
Improved Highways

A state macadam road extending to Montreal passes in a northerly direction through the center of the county. At Jay this road divides, one branch extending through the celebrated Wilmington Notch to Lake Placid and thence through Ray Brook and Saranac Lake and into Franklin County. Another improved highway runs north from Ticonderoga and Whallonsburgh and will eventually extend to Keeseville and along Lake Champlain to Westport. A state highway extends from Grove in Hamilton County east into Essex and south into Warren, there connecting with a road running through the center of Essex County and continuing south to Glens Falls and Albany.

There are in Essex County 167 miles of completed improved highways.

Available Markets

On account of the large number of tourists and summer residents, local markets during the summer months often excel the city markets for the sale of vegetables, poultry, and dairy products. Other farm products are shipped in the usual manner to New York, Boston, or intermediate points.


CLINTON
FRANKLIN
HAMILTON
WARREN
VT.
LAKE CHAMPLAIN
ESSEX
Ausable Chasm
Keeseville
Ausable Forks
Wilmington
Jay
Upper Jay
Bloomingdale
Trudeau
Saranac Lake
Raybrook
Lake Placid
Lake Placid
Newman
John Brown's Grave
Keene
Cascade Lakes
Keene Valley
Beede
Elizabethtown
New Russia
Westport
Cross
Lewis
Whallonsburgh
Essex
Wadhams Mills
Willsboro
Euba Mills
Mineville
Moriah Ctr.
Moriah
Port Henry
Tahawus Club
Tahawus
Newcomb
Blue Ridge
N. Hudson
Schroon River
Ironville
Hammondville
Crown Pt.
Chilson
Street Road
Ticonderoga
Paradox
Severance
Schroon Falls
Schroon Lake
Schroon Lake
S. Schroon
Olmsteadville
Minerva
Aiden Lair
North Woods Club
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

The milk establishments in Essex County are gathered cream plants. Nearly a half million pounds of cream and a half million pounds of butter are sold, Essex County butter having an excellent reputation. The gathered cream business lends itself particularly well to the raising of calves and pigs. During the summer considerable milk is consumed within the county at the various summer resorts. The interest manifested in pure-bred stock is shown by the fact that there is at least a small number of purebreds on almost every farm.

The agricultural organizations are as follows:

Champlain Valley Cooperative Association, Inc.
Essex Cooperative Creamery Company.
Essex County Agricultural Society.
Essex County Farm Bureau.
Essex County National Farm Loan Association.
Essex County Sheep Breeders' Association.
Granges: Pomona and 15 subordinate granges.

EDUCATIONAL FACILITIES

Schools registered with the regents as having facilities suitable for maintaining approved courses in high school and academic work are located at Ausable Forks, Bloomingdale, Crown Point, Elizabethtown, Essex, Keene Valley, Keeseville, Lake Placid, Mineville, Newcomb, Port Henry, Schroon Lake, Ticonderoga, Westport, and Willsboro.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	359,008
Number of farms	2,274
Per cent of farm land improved	40.9

LIVE STOCK PRODUCTS

Milk sold	785,141 gal.
Cream sold	12,516 gal.
Butter fat sold	454,400 lbs.
Butter produced	361,867 lbs.
Cheese produced	....
Eggs produced	347,771 doz.
Wool produced	13,620 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	5,907
Cattle	18,790
Sheep	19,814
Swine	4,949
Poultry	61,169

BEES

Number of colonies	1,035

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	3,078	96,383 bu.
Oats	10,314	222,971 bu.
Wheat	52	766 bu.
Barley	515	9,395 bu.
Buckwheat	1,645	25,197 bu.
Rye	92	1,127 bu.
Hay and Forage	55,649	50,479 tons
Special Crops:		
Potatoes	2,769	269,319 bu.
Vegetables, other than potatoes	662	....
Dry edible beans	80	1,144 bu.
Dry peas	10	181 bu.
Fruits:		
Apples	7,168 trees	46,257 bu.
Peaches and nectarines	472 trees	19 bu.
Pears	1,527 trees	1,365 bu.
Plums and prunes	2,591 trees	495 bu.
Cherries	4,273 trees	344 bu.
Quinces	4 trees	....
Grapes	14,116 vines	57,579 lbs.
Small fruits	42 acres	44,083 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,323	1,944

LIVE STOCK AND POULTRY

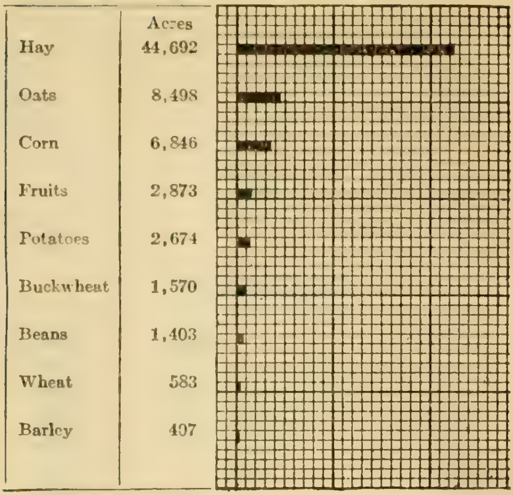
	1917 Number	1918 Number
Horses and mules	4,672	4,849
Cattle	17,083	17,653
Sheep	16,457	14,499
Swine	4,238	4,076
Poultry	68,915	56,057

BEES

	1917	1918
Number of colonies	1,506	1,453

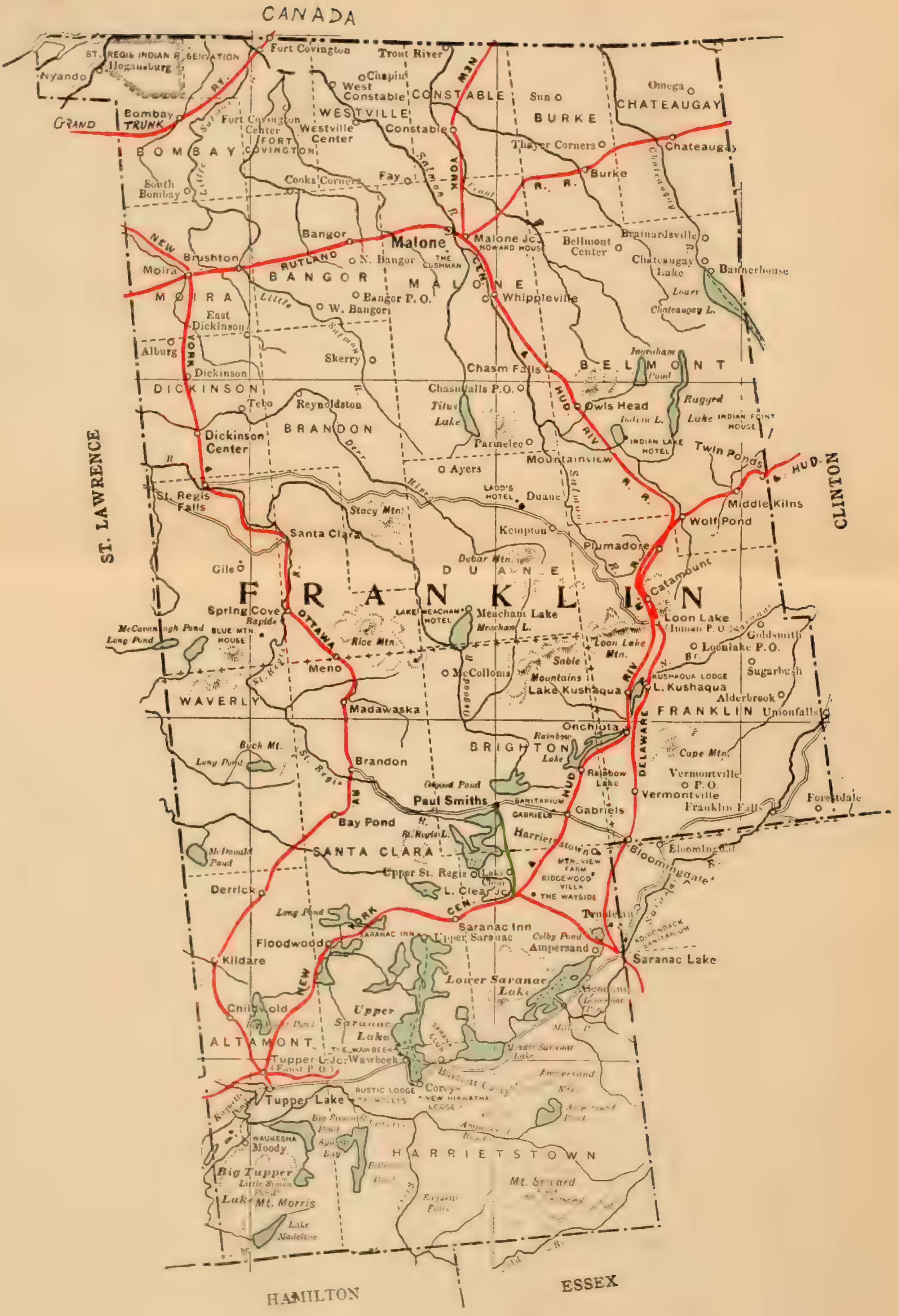
SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	2,532	4,457	47,782 bu.
Oats	9,553	8,498	183,416 bu.
Barley	422	407	7,690 bu.
Buckwheat	1,631	1,570	21,030 bu.
Wheat (winter)	64	72	972 bu.
Wheat (spring)	182	511	6,724 bu.
Rye	168	176	1,451 bu.
Hay and Forage:			
Alfalfa	476	531	1,425 tons
Other hay	49,237	44,161	55,245 tons
Corn (ensilage)	2,072	1,623	10,684 tons
Corn (fodder)	....	766	....
Special Crops:			
Field beans	871	1,403	7.371 bu.
Cabbage	153	97	481 tons
Potatoes	3,187	2,674	279,978 bu.
Roots raised for stock food	....	278	....
Canning factory crops	6	8	....
Other vegetables and garden crops	550	635	....
Fruits:			
Apples	2,308	2,698	45,229 bu.
Peaches	....	10	....
Pears	17	20	....
Plums	20	25	....
Cherries	32	50	....
Vineyard	5	10	....
Small fruits	180	60	....



	Acres
Hay	44,692
Oats	8,498
Corn	6,846
Fruits	2,873
Potatoes	2,674
Buckwheat	1,570
Beans	1,403
Wheat	583
Barley	497

FIG. 69.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN ESSEX COUNTY


CANADA
ST. LAWRENCE
CLINTON
HAMILTON
ESSEX
FRANKLIN
ST. REGIS INDIAN RESERVATION
Hogansburg
Nyando
Fort Covington
Trout River
Chapin
West Constable
CONSTABLE
Sun
CHATEAUGAY
Omega
Bombay
GRAND TRUNK RY.
Fort Covington Center
FORT COVINGTON
WESTVILLE
Westville Center
Constable
BURKE
Thayer Corners
Chateaugay
BOMBAY
South Bombay
Cooks Corners
Fay
Burke
Salmon R.
NEW YORK CEN.
R. R.
Bangor
Malone
Malone Jc.
HOWARD HOUSE
Bellmont Center
Brainardsville
Chateaugay Lake
Bannerhouse
Lower Chateaugay L.
NEW
Brushton
Moira
RUTLAND
N. Bangor
THE CUSHMAN
BANGOR
MALONE
Bangor P. O.
Whippleville
MOIRA
East Dickinson
Little Salmon
W. Bangor
Alburg
YORK
Skerry
Chasm Falls
BELMONT
Ingraham Pond
Dickinson
DICKINSON
Chasmfalls P.O.
Owls Head
Ragged Lake
INDIAN POINT HOUSE
Tebo
Reynoldston
Titus Lake
Indian L.
INDIAN LAKE HOTEL
BRANDON
Deer
Parmelee
HUD. RIV. R. R.
Dickinson Center
Ayers
Mountainview
Twin Ponds
HUD.
LADD'S HOTEL
Duane
Middle Kilns
St. Regis Falls
River
Stacy Mtn.
Salmon
Wolf Pond
Santa Clara
Kempton
Plumadore
Debar Mtn.
DUANE
Gile
Catamount
Spring Cove
Rapids
LAKE MEACHAM HOTEL
Meacham Lake
Meacham L.
Loon Lake
(Inman P. O.)
Goldsmith
McCavanagh Pond
Long Pond
BLUE MTN. HOUSE
OTTAWA
Rice Mtn.
Loon Lake Mtn.
Loonlake P.O.
Meno
McCollom
Sable Mountains
N. Br.
Sugarbush
St. Regis
Osgood R.
KUSHAQUA LODGE
L. Kushaqua
Lake Kushaqua
Alderbrook
WAVERLY
Madawaska
FRANKLIN
Unionfalls
Onchiota
Rainbow Lake
Buck Mt.
BRIGHTON
Cape Mtn.
Long Pond
St. Regis
Brandon
DELAWARE
Rainbow Lake
Vermontville P.O.
Vermontville
Osgood Pond
Paul Smiths
SANITARIUM GABRIELS
Gabriels
Franklin Falls
Forestdale
RY.
Bay Pond
St. Regis L.
Harrietstown
Bloomingdale
Bloomingdale R.
McDonald Pond
SANTA CLARA
MTN. VIEW FARM
RIDGEWOOD VILLA
Upper St. Regis
Lake Clear
Derrick
L. Clear Jc.
THE WAYSIDE
Long Pond
Trudeau
CEN.
Saranac Inn
SARANAC INN
Upper Saranac
Colby Pond
ADIRONDACK SANITARIUM
Floodwood
Ampersand
Saranac Lake
Kildare
Lower Saranac Lake
Childwold
Upper Saranac Lake
SARANAC CLUB
Middle Saranac Lake
ALTAMONT
THE WAWBEEK
Tupper L. Jc.
(Faust P. O.)
Wawbeek
Coreys
Ampersand Mt.
RUSTIC LODGE
NEW HIAWATHA LODGE
Tupper Lake
Ampersand Pond
WAUKESHA
Moody
HARRIETSTOWN
Big Tupper Lake
Little Simon Pond
Mt. Morris
Mt. Seward
Lake Madeline

MAP OF FRANKLIN COUNTY, SHOWING TOWNSHIPS
Red, railroads; green, electric roads

FRANKLIN COUNTY

This county lies in the northeastern part of the state, with the province of Quebec forming the northern boundary. Its area is 1,073,920 acres, and it extends approximately 32 miles east and west and 62 miles north and south.

The population is shown in the following table:

POPULATION BY TOWNSHIPS

(Census of 1915)

Altamont	4,480	Fort Covington	2,045
Bangor	2,179	Franklin	1,378
Belmont	2,031	Harrietstown	4,716
Bombay	1,337	Malone *	11,255
Brandon	860	Moira	2,413
Brighton	777	Santa Clara	525
Burke	1,835	Waverly	2,133
Chateaugay	2,903	Westville	1,128
Constable	1,331		
Dickinson	1,514	Total	46,181
Duane	255		

---

* Malone, in the town of Malone, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Clinton in 1808 and named in honor of Benjamin Franklin. A small portion was later added to Essex.

The earliest settlement of the county was made at St. Regis, by a colony of St. Regis Indians under Father Anthony Gordon, a Jesuit, about 1760. About 1,500 of the tribe now live on a reservation in the northwestern corner of the county.

The first white settlements were made in Chateaugay in 1796 by emigrants from Vermont. During the War of 1812 the county was overrun by the enemy, who seized a considerable amount of military stores at Fort Covington (then known as French Mills), Chateaugay, and Malone.

In the early times this county was quite secluded from the rest of the state and much of its trade and business was carried on with Canada. The completion of railroads has since been of great importance in the development of the county.

Saranac Lake village, which is a noted health resort, owes much of its prominence to two men. The first of these men is W. H. H. Murray, who published in 1868 an alluring sketch of Adirondack life and pleasures, thereby attracting many visitors to that section.

In 1873 Dr. E. L. Trudeau of New York City, who had become a victim of tuberculosis and had apparently but a short time to live, chose to spend his remaining days in the forests that he so much loved. Since he derived benefit from the surroundings, a number of similar sufferers were sent to be under his observation. The accommodations required for the constantly increasing number of patients formed the nucleus for what has since become the village of Saranac Lake, which is unusually enterprising and progressive.

DEVELOPMENT OF INDUSTRY

The manufacture of starch from potatoes was an important business in this section from twenty-five to fifty years ago. Today the starch business is a thing of the past, and immense quantities of potatoes are marketed for table use. Hops, which were once extensively grown, are now limited to a very small acreage.

Dairying is the leading agricultural activity, the spacious dairy barns and the silos now in use bearing evidence of its importance in the agriculture of Franklin County. Since the increase in the dairy business less attention has been given to the raising of sheep, although there is an excellent opening for the development of this industry.

The soil and climate of Franklin County are especially adapted to the production of potatoes, hay, vegetables, and oats. In the census of 1910 the average production of potatoes was given as 197 bushels to the acre. In the towns of Bangor, Constable, and Westville small fruits and vegetables are largely produced.

The largest industry in the county outside of agriculture is probably a wood-manufacturing business known as the Oval Dish Company of Tupper Lake.

CLIMATE AND RAINFALL

The climatological records for Franklin County are taken from the Gabriels station, which has an elevation of 1,750 feet.

Average dates for the last killing frost in spring and the first in fall are June 4 and September 24, respectively, giving a growing season of 91 days. The records have been taken on the grounds of the sanitarium conducted by the Sisters of Mercy.

The following table summarizes records covering the period 1900 to 1918:

RECORDS OF TEMPERATURE AND PRECIPITATION AT GABRIELS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	14.4	62	1906	—46	1904	2.55	1.00	1910	19.3
February	12.4	76	1903	—38	1914	2.35	1.20	1916	19.7
March	24.4	82	1903	—22	1916*	2.61	2.00	1913	14.9
April	39.0	85	1913	2	1914	2.41	1.74	1918	6.6
May	51.3	94	1911	10	1903	3.23	2.35	1916	1.5
June	58.8	94	1907	22	1905	3.57	2.20	1901	......
July	64.3	96	1911	30	1909	3.84	2.25	1913	......
August	61.5	94	1916	27	1909	3.70	2.50	1903	......
September	54.9	88	1913	18	1904	3.38	1.48	1917	......
October	45.3	84	1909	2	1903	3.15	2.60	1904	0.9
November	30.7	70	1909	—13	1917	2.76	2.27	1900	16.2
December	18.0	56	1911	—42	1917	2.44	1.80	1901	18.4
Year	39.6	96	1911	—46	1904	35.99	2.60	1904	97.5

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Franklin County is mostly level in the north, undulating and hilly in the center, and broken and mountainous in the south, the general slope being toward the north. Mt. Seward, in the southeastern part, 5,100 feet above tide, is the highest peak. The plateau in the center and the valleys of the southern part of the county have an elevation of about 1,600 feet above tide.

The county is mostly drained by tributaries of the St. Lawrence. In the southern wilderness are numerous lakes, some of which are several miles in extent, so located that only slight improvements are needed to connect them, and thus form a communication between the headwaters of streams flowing in opposite directions. In the northwestern part the soil is generally a heavy clay, underlaid by calciferous stone. South of this region is a valley about eight miles wide underlaid by Potsdam sandstone. A portion of this belt has a sandy soil, and the remainder a fine, fertile loam mixed with clay. In the central and southern portions the soil is of a light, sandy nature, not well adapted for cultivation, especially near the mountain region, where large tracts are valued principally for their timber and iron ore.

DESCRIPTION BY TOWNSHIPS

ALTAMONT: The surface is rocky and mountainous, with considerable wooded area. Among the mountains lie several lakes, the largest of which are Big Wolf, Raquette, and Big Simon ponds, and Lake Madeline. Big Tupper Lake lies partly within the town. Farming is followed only in a very limited way.

Products: Dairy products, potatoes, and grain.

Average values of farm land range from $20 to $60 an acre.

BANGOR: The surface is gently undulating with a general northerly inclination. The underlying rock is Potsdam sandstone, appearing only in the valleys of the streams. The soil is a fertile, sandy loam in the north and a clayey loam in the south.

Products: Dairy products, potatoes, corn, hay, grain, vegetables, apples, pears, and strawberries.

Average values of farm lands range from $30 to $100 an acre.

BELMONT: The surface is wild and rocky, with a general inclination toward the north. Among the hills are several beautiful lakes, the principal of which are Lower Chateaugay and Ragged lakes and Ingraham and Indian ponds. A considerable portion of the town is unfit for agricultural purposes and valuable only for its timber. Settlements are chiefly confined to the northern part.

Products: Dairy products, potatoes, hay, and grain.

Average values of farm land range from $20 to $75 an acre.

BOMBAY: The surface is generally level. The soil is sandy in the south, and a deep, fertile clayey loam in the north. The St.

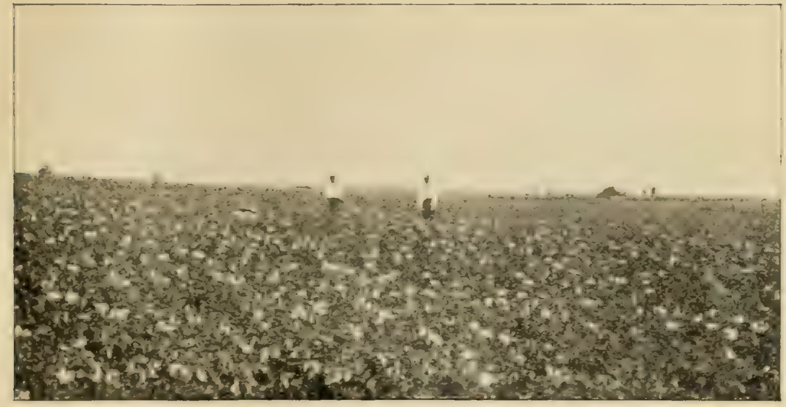


Fig. 70.— Potatoes Being Inspected for Certified Seed on Farm of Frank Hobart, Gabriels, Franklin County

Fig. 71.— Farm Owned by A. S. Hosley, Tupper Lake, Franklin County

Regis is navigable to Hogansburg, at which place is a good water power. The St. Regis Indian Reservation lies in the northern part of this town.

Products: Dairy products, hay, oats, corn, potatoes, barley, wheat, beans, and buckwheat.

Average values of farm land range from $30 to $100 an acre.

BRANDON: A limited section in the north is moderately hilly, with a general northerly inclination. The remainder is broken and mountainous, and mostly unfit for cultivation. The settlements are confined to the northern part. The soil is generally light and sandy, best adapted to cultivation along the courses of the streams.

Products: Dairy products, potatoes, hay, and grain.

Average values of farm land range from $20 to $60 an acre.

BRIGHTON: The surface is broken and mountainous, and the soil light and sandy, much of it being undesirable for cultivation. The settlements are chiefly in the eastern part. A large number of lakes occupy portions of the town.

Products: Dairy products, potatoes, hay, oats, buckwheat, barley and wheat.

Average values of farm land range from $20 to $60 an acre.

BURKE: The surface is undulating, with a general inclination toward the north. The soil is clayey and sandy loam.

Products: Potatoes, dairy products, hay, corn, oats, barley, buckwheat and wheat.

Average values of farm land range from $30 to $100 an acre.

CHATEAUGAY: The surface is rolling, with a northerly inclination. Half a mile east of the village of Chateaugay is an intermittent spring rising from the sand, sometimes flowing in sufficient quantities to supply a mill and at others perfectly dry. It has no regular periods of intermission, flowing in periods of from a few weeks to more than a year. Bubbles of nitrogen gas are emitted with the water. The soil is a clayey loam, interspersed with clay, and sandy in some parts.

Products: Potatoes, dairy products, corn, grain and hay.

Average values of farm land range from $30 to $100 an acre.

CONSTABLE: The surface is rolling, with a northerly inclination. The soil is principally a light, sandy loam. A strip of sand lies along the southern border.

Products: Dairy products, small fruits, potatoes and other vegetables, hay, corn and oats.

Average values of farm land range from $20 to $75 an acre.

DICKINSON: The surface is rolling and hilly in the northern part, with a soil of sandy loam of good quality. The central and southern parts are more broken.

Products: Dairy products, corn, potatoes, hay, oats, barley, and vegetables.

Average values of farm land range from $20 to $75 an acre.

DUANE: The surface is broken and mountainous, and the soil light and sandy. A large part of this town is forest-covered.

Products: Dairy products, potatoes, hay, oats and corn.

Average values of farm land range from $10 to $40 an acre.

FORT COVINGTON: The surface is level and gently undulating. The soil in the north is a rich, clayey loam and in the south a light sandy loam. Although it contains excellent farming land, good markets are not easily accessible.

Products: Dairy products, hay, corn, beans, potatoes, oats, wheat, buckwheat, and barley.

Average values of farm land range from $20 to $75 an acre.

FRANKLIN: The surface is broken and mountainous, with an elevation of from 1,200 to 2,000 feet above tide. The Loon Lake Mountains in the western part reach a height of 3,350 feet. Among the mountains are numerous ponds and lakes. The soil is sandy and is tilled mostly along the streams. The settlements are generally confined to the eastern and southern parts.

Products: Dairy products, potatoes, hay, oats, buckwheat, barley, and wheat.

Average values of farm land range from $10 to $40 an acre.

HARRIETSTOWN: The surface is rocky and mountainous. Seward and Seymour, in the southeastern part, are respectively 4,400 and 4,100 feet in height. Among the mountains are a great number of lakes, the principal of which are Lower Saranac and Big Clear. The waters of Saranac Lake and Stony Creek Pond are separated only by a narrow strip of land, forming the only portage for canoes between Lake Champlain and the Raquette River. The soil is a light, sandy loam, much of it being unfit for cultivation, except in the northern part.

Products: Dairy products, potatoes, and grain.

Average values of farm land range from $20 to $60 an acre.

MALONE: The surface is undulating in the north and broken and hilly in the south. The Salmon River flows northerly through the town in a deep valley worn by its waters, and nearly its whole course is a succession of rapids and cascades. In the north, where not covered by light drift deposits, the soil is fertile and well improved, but in the south it is sandy, unproductive, and rocky. Potsdam sandstone of excellent quality for building has been quarried near the village.

Products: Dairy products, potatoes, corn, hay, grain and apples.

Average values of farm land range from $30 to $100 an acre.

MOIRA: The surface is generally level, with a slight inclination toward the north. The soil is a sandy loam, generally fertile.

Products: Dairy products, potatoes, hay, corn, barley, oats, buckwheat, and beans.

Average values of farm land range from $30 to $125 an acre.

SANTA CLARA: The surface is broken and mountainous. The greater part of Upper Saranac Lake lies within the town, and several smaller lakes are included within its limits. Agriculture in Santa Clara is very limited.

Average values of farm land range from $10 to $40 an acre.

WAVERLY: The surface is broken and mountainous, especially in the southern part, which is largely forest-covered. The eastern and northern parts are drained by the St. Regis River. A number of small lakes are scattered throughout the town.

Products: Dairy products, potatoes and grain.

Average values of farm land range from $20 to $60 an acre.

WESTVILLE: The surface is nearly level, with a slight inclination toward the north. It is drained by the Salmon River, on which are several falls, affording good water power. The soil in the southern part is decidedly sandy, and elsewhere a fertile, clayey loam.

Products: Dairy products, corn, hay, oats, potatoes, and small fruits.

Average values of farm land range from $20 to $75 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

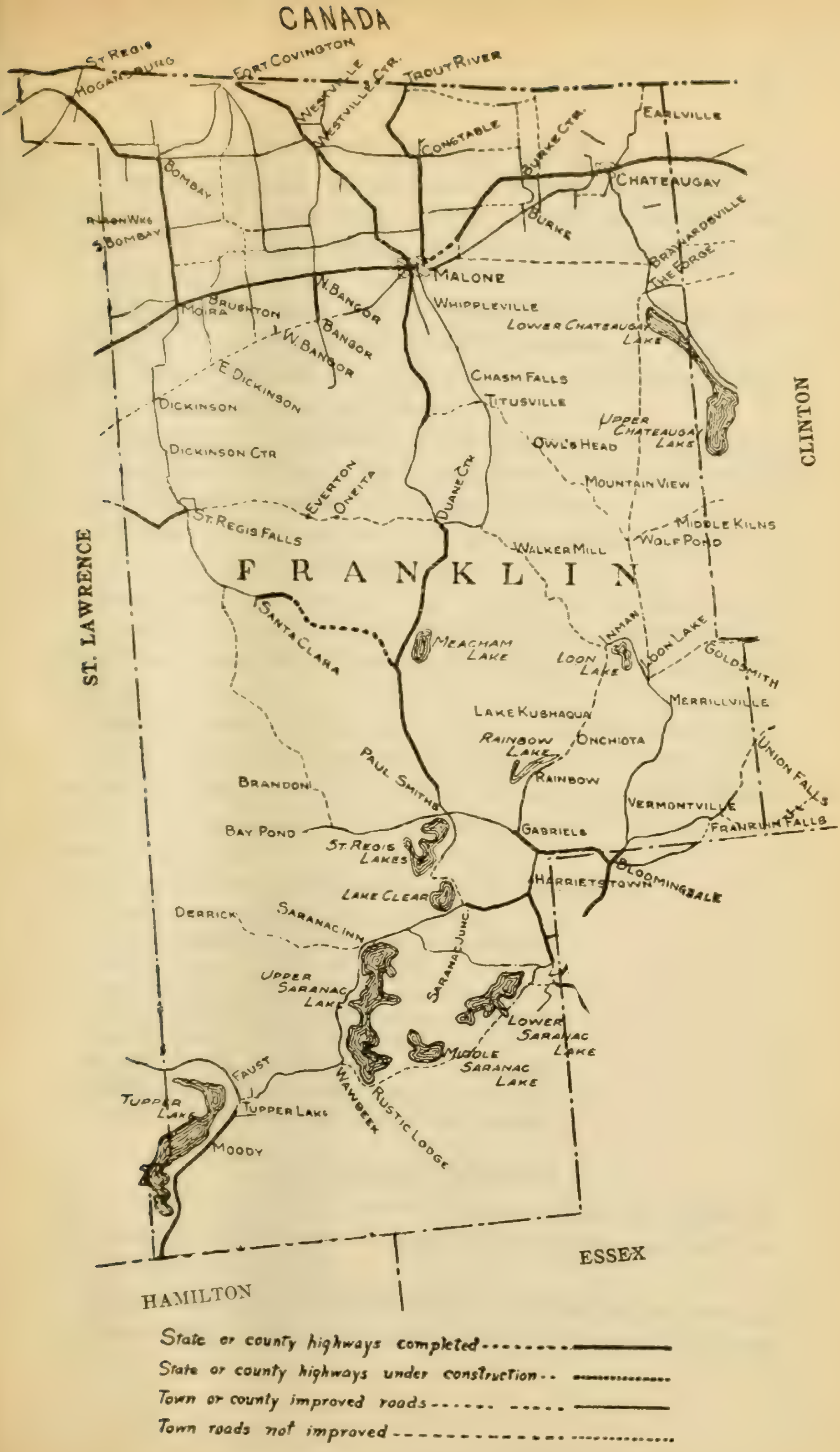
Rail and Electric Roads

The Ottawa and Montreal lines of the New York Central extend north and south through Franklin County and unite at Tupper Lake Junction, extending from that point southwest to the main line at Herkimer. The Delaware and Hudson line from Lake Placid, Essex County, connects with a branch of the New York Central at Saranac Lake, extending from this point north along the general course of the Montreal line until it reaches Wolf Pond, from there turning east to Lake Champlain. The Rutland road crosses the northern part of the county, connecting with the two New York Central lines at Moira and Malone. The Grand Trunk line from Montreal runs through Fort Covington and Bombay west to Massena. An electric road connects Paul Smiths with Lake Clear Junction.

Improved Highways

From Malone improved highways extend as follows: West through Moira to Ogdensburg; northwest to Fort Covington; north through Constable to Trout River on the Canadian border; south to Lake Meacham, Paul Smiths, Saranac Lake and Tupper Lake, and east through Chateaugay to Lake Champlain. Additional improved highways are: from Moira north through Bombay and south through Dickinson to St. Regis Falls; from St. Regis Falls west to the St. Lawrence County line.

There are in the county 116 miles of completed improved highways, with 24 miles additional under construction.


CANADA
ST REGIS
HOGANSBURG
FORT COVINGTON
WESTVILLE
WESTVILLE CTR.
TROUT RIVER
CONSTABLE
BURKE CTR.
EARLVILLE
CHATEAUGAY
BOMBAY
BURKE
BRAINARDSVILLE
THE FORGE
RIVERSIDE WKS
S. BOMBAY
MALONE
N. BANGOR
WHIPPLEVILLE
MOIRA
BRUSHTON
BANGOR
W. BANGOR
LOWER CHATEAUGAY LAKE
E DICKINSON
CHASM FALLS
TITUSVILLE
DICKINSON
UPPER CHATEAUGAY LAKE
OWL'S HEAD
CLINTON
DICKINSON CTR
EVERTON
ONEITA
DUANE CTR
MOUNTAIN VIEW
MIDDLE KILNS
ST. REGIS FALLS
WOLF POND
WALKER MILL
FRANKLIN
ST. LAWRENCE
SANTA CLARA
MEACHAM LAKE
INMAN
LOON LAKE
LOON LAKE
GOLDSMITH
MERRILLVILLE
LAKE KUSHAQUA
RAINBOW LAKE
ONCHIOTA
UNION FALLS
PAUL SMITHS
RAINBOW
BRANDON
VERMONTVILLE
FRANKLIN FALLS
BAY POND
GABRIELS
ST. REGIS LAKES
HARRIETSTOWN
BLOOMINGDALE
LAKE CLEAR
DERRICK
SARANAC INN
SARANAC JUNC.
UPPER SARANAC LAKE
LOWER SARANAC LAKE
MIDDLE SARANAC LAKE
FAUST
TUPPER LAKE
TUPPER LAKE
WAWBEEK
RUSTIC LODGE
MOODY
ESSEX
HAMILTON
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

AVAILABLE MARKETS

Saranac Lake and the Adirondack resorts are the best local markets, better prices being realized at these points than elsewhere in the county. Saranac has a floating population of from 1,200 to 1,500.

Malone is also a good market. Here are located railroad shops, and two woolen factories making men's garments.

At Malone Junction is a large pulp mill, also a bronze factory that has recently been established.

Chateaugay is an excellent potato market. At this place the Sheffield Farms Company handle large quantities of milk which is made into the condensed or evaporated product.

Potatoes, butter, and milk are extensively shipped to New York and to the New England cities.

Large receiving plants for milk are located in the towns of Chateaugay, Brushton, Moira, Bombay, Malone, Bangor, Burke, and Fort Covington, at several of which milk is condensed for market.

About 25 per cent of the milk collected is sold as market milk. There is manufactured within the county over 500,000 pounds of butter; nearly 1,000,000 pounds of cheese, including American and foreign types, and 25,000,000 pounds of condensed and evaporated milk.

The agricultural organizations are as follows:

Franklin County Agricultural Society.
Franklin County Dairy Improvement Association.
Franklin County Dairymen's League.
Franklin County Farm Bureau Association.
Franklin County National Farm Loan Association.
Franklin County Poultry Association.
Franklin County Seed Potato Growers' Association.
Franklin-Meridale Dairy Improvement Association.
Granges: Pomona and eleven subordinate granges.

EDUCATIONAL FACILITIES

Approved courses in agriculture are given at Brushton, Chateaugay, and Malone. Courses in home making are included at Brushton and Malone.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows:

Bombay, Brushton, Chateaugay, Dickinson Center, Fort Covington, Malone, Moira, North Bangor, St. Regis Falls, Saranac Lake, and Tupper Lake.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	429, 437 acres
Number of farms	3, 675
Per cent of farm land improved	46.5

LIVE STOCK PRODUCTS

Milk sold	7, 817, 924 gal.
Cream sold	30, 639 gal.
Butter fat sold	1, 052, 671 lbs.
Butter produced	318, 201 lbs.
Cheese produced	....
Eggs produced	582, 956 doz.
Wool produced	3, 372 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	9, 262
Cattle	46, 108
Sheep	5, 233
Swine	12, 893
Poultry	98, 495

BEES

Number of colonies	1, 087

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	4, 413	144, 646
Oats	24, 820	756, 302
Wheat	595	10, 142
Barley	2, 086	62, 709
Buckwheat	1, 384	27, 615
Rye	438	5, 549

	Acres	Tons
Hay and forage	84, 528	107, 630

Special Crops:	Acres	Yield
Potatoes	7, 273	1, 433, 761 bu.
Vegetables, other than potatoes	824	....
Dry edible beans	175	2, 447 bu.
Dry peas	39	733 bu.

Fruits:		Yield
Apples	73,303 trees	75,795 bu.
Peaches and nectarines	49 trees	29 bu.
Pears	291 trees	66 bu.
Plums and prunes	511 trees	24 bu.
Cherries	376 trees	30 bu.
Quinces	3 trees	1 bu.
Grapes	314 vines	5,761 lbs.
Small fruits	79 acres	66,283 qts.

PRESENT STATUS OF AGRICULTURE

(From census of 1917 and census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,312	3,182

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	9,059	8,688
Cattle	48,211	44,345
Sheep	3,842	3,661
Swine	4,238	6,060
Poultry	107,557	93,129

BEES

	1917 Number	1918 Number
Number of colonies	1,468	1,603

SELECTED CROPS

Cereals:	1917 Acres	1918 Acres	1918 Bushels
Corn	3,154	2,150	41,562
Oats	25,267	20,688	460,358
Barley	1,699	1,567	36,786
Buckwheat	2,063	2,136	23,989
Wheat (winter)	42	85	1,152
Wheat (spring)	1,122	2,331	36,274
Rye	862	515	7,995

Hay and Forage:	1917 Acres	1918 Acres	1918 Yield
Alfalfa	149	183	433 tons
Other hay	79,676	89,838	109,274 tons
Corn (ensilage)	8,253	6,918	52,878 tons
Corn (fodder)	....	3,326	....

	1917	1918	
Special Crops:	Acres	Acres	Yield
Field beans	1,103	1,915	13,682 bu.
Cabbage	56	80	445 tons
Potatoes	7,526	7,868	1,148,625 bu.
Roots raised for stock food	....	285	....
Canning factory crops	....	5	....
Other vegetables and garden crops	948	733	....
Fruits:			
Apples	1,216	1,279	24,701 bu.
Peaches	....	....	5 bu.
Pears	....	1	56 bu.
Plums	1	5	869 lbs.
Cherries	4	2	2,428 lbs.
Vineyard	8	....	....
Small fruits	142	79	....

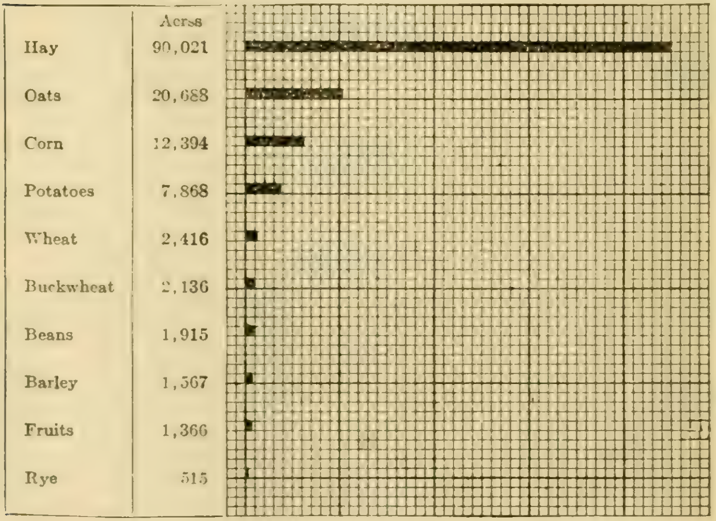
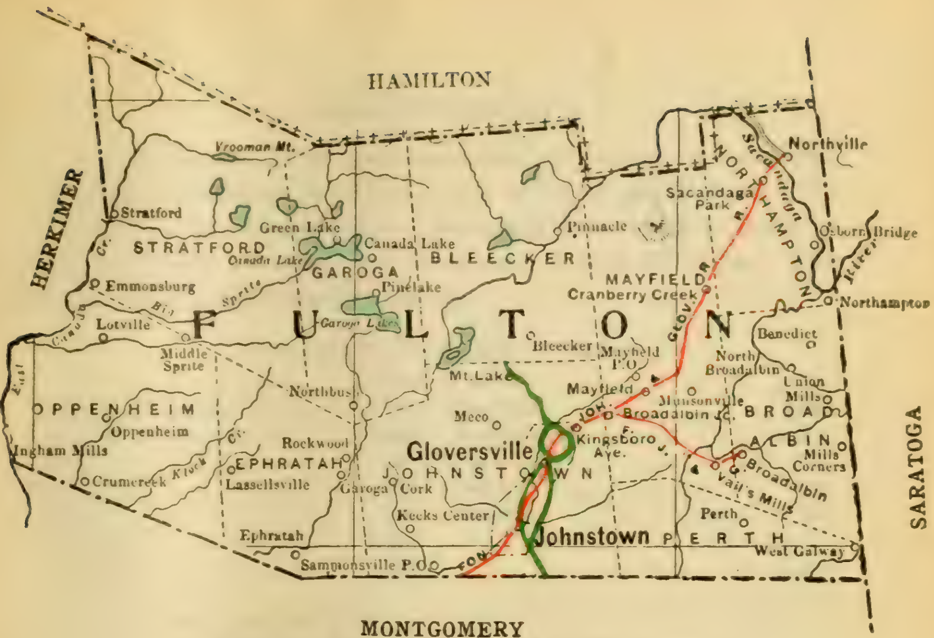
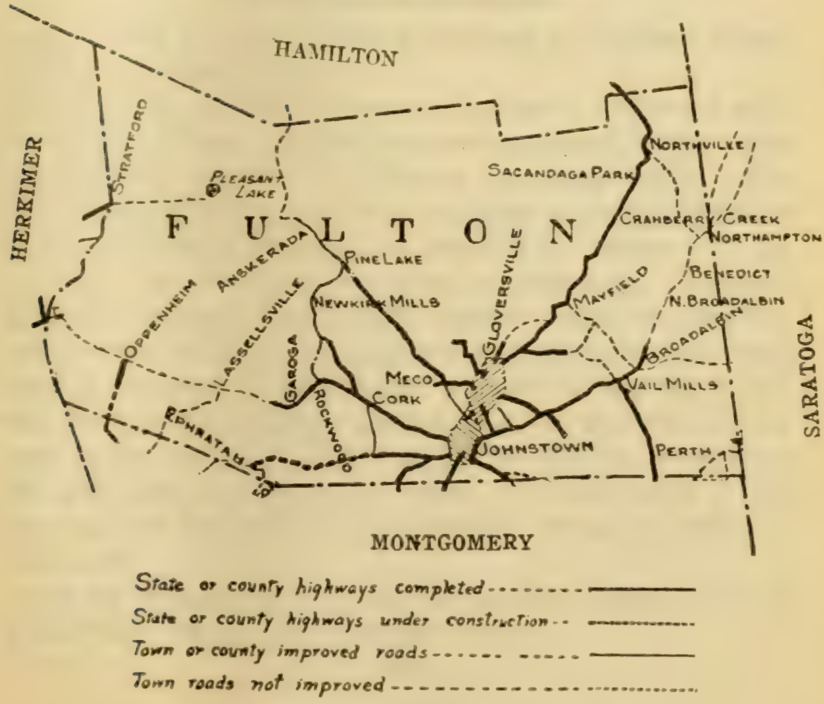


FIG. 72.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN FRANKLIN COUNTY


HAMILTON
HERKIMER
SARATOGA
MONTGOMERY
FULTON
Vrooman Mt.
Stratford
STRATFORD
Emmonsburg
Lotville
Middle Sprite
Green Lake
Canada Lake
GAROGA
Pinelake
Garoga Lake
BLEECKER
Pinnacle
Bleecker
Mt. Lake
Northville
Sacandaga Park
NORTHAMPTON
Osborn Bridge
Northampton
MAYFIELD
Cranberry Creek
Mayfield P.O.
Mayfield
Benedict
North Broadalbin
Union Mills
Munsonville
Broadalbin Jc.
BROADALBIN
Mills Corners
Broadalbin
Vail's Mills
Perth
PERTH
West Galway
OPPENHEIM
Oppenheim
Ingham Mills
Crumcreek
Northbush
Rockwood
EPHRATAH
Lassellsville
Ephratah
Sammonsville P.O.
Meco
Gloversville
Kingsboro Ave.
JOHNSTOWN
Garoga
Cork
Kecks Center
Johnstown

MONTGOMERY

Map of Fulton County. Showing Townships
Red, railroads; green, electric roads


HAMILTON
HERKIMER
SARATOGA
MONTGOMERY
FULTON
STRATFORD
PLEASANT LAKE
ANSKERADA
PINE LAKE
NEWKIRK MILLS
OPPENHEIM
LASSELLSVILLE
GAROGA
ROCKWOOD
EPHRATAH
MECO
CORK
GLOVERSVILLE
JOHNSTOWN
SACANDAGA PARK
NORTHVILLE
CRANBERRY CREEK
NORTHAMPTON
BENEDICT
N. BROADALBIN
MAYFIELD
BROADALBIN
VAIL MILLS
PERTH
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

FULTON COUNTY

Fulton County lies in the eastern part of the state, its southern boundary extending to within a few miles of the Mohawk. It has an area of 330,240 acres. Its extent from north to south is approximately 17 miles, and from east to west 30 miles. The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Gloversville (city)	21,178	Mayfield	2,095
Johnstown (city)*	10, 687	Northampton	2,231
Bleecker	498	Oppenheim	1,161
Broadalbin	2,030	Perth	713
Caroga	516	Stratford	534
Ephratah	1,288		
Johnstown	2,694		45,625

* Johnstown is the county seat.

NOTE: Gloversville now has a population of 22,000.

HISTORICAL ASSOCIATIONS

This county was formed from Montgomery in 1838, and named in honor of Robert Fulton.

The history of Fulton County is intimately connected with that of Sir William Johnson, who was appointed Indian agent and gradually acquired an influence over these people. His first residence was fixed at what is still known as Fort Johnson on the Mohawk in the town of Amsterdam. About 1761 he removed to a place near the village of Johnstown. Previous to the Revolution he was liberally inclined toward the colonists, but his duty to the English government prevented him from favoring the cause of the colonies. Before the opening of the war, however, his son, Sir John Johnson, was appointed Indian agent in his place. It soon became evident that the influence of the new agent over the native tribes was unfavorable to the colonists, and the havoc that was wrought among the settlers is well known.

The Sir William Johnson mansion and block-house, erected in Johnstown, 1762, are now owned by the state.

DEVELOPMENT OF INDUSTRY

The glove and mitten manufacturing industry of Fulton County is believed to have been started as such at Kingsboro in 1809. At this time no gloves were manufactured, the entire production consisting of heavy mittens. At a later date material improvements were made in the process of dressing the skins, when they were made more flexible and suitable for the manufacture of gloves. At the present time the leading industry in the cities of Johnstown and Gloversville is the manufacture of these articles.

The northern part of Fulton County, with the exception of portions of the town of Northampton, is largely forest-covered, and agriculture is of very little importance. Lumbering is the principal industry, especially in the towns of Stratford, Caroga, and Bleecker. Recently, however, the state has purchased a large part of the northern portion of Caroga, together with portions of Bleecker, Stratford, and Mayfield. In the town of Northampton along the Sacandaga River, in the vicinity of Northville, is a section where considerable agriculture is carried on. In the southern part of the county dairying and general agriculture are important, the principal products being market milk, hay, potatoes, oats, buckwheat, and corn.

CLIMATE AND RAINFALL

The meteorological station of Fulton County is located at Gloversville, 850 feet above sea level. The present observer is Mrs. John McLean.

Average dates for the last killing frost in spring and the first in fall are May 10 and September 26, respectively, giving a growing season of 139 days.

The following table covers the period 1892 to 1918:

Record of Temperature and Precipitation at Gloversville

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	18.6	50	1913	—32	1904	3.45	1.94	1898	21.1
February	17.6	56	1903	—28	1908	3.35	1.84	1918	23.2
March	28.9	73	1903	—12	1916*	3.78	1.95	1903	15.4
April	43.4	89	1915*	9	1911	3.02	1.80	1902	3.8
May	55.4	96	1911	23	1903	3.88	2.65	1906	0.1
June	63.6	95	1901	32	1912	4.20	2.59	1897	......
July	68.9	100	1911	38	1898	4.07	2.70	1915	......
August	66.3	95	1918	35	1912	3.86	3.02	1904	......
September	59.1	96	1914	25	1914	3.93	2.20	1913	T.
October	47.9	86	1900	18	1904	3.40	2.60	1903	0.2
November	35.0	70	1895	—1	1903	3.16	2.56	1896	6.3
December	23.1	64	1895	—34	1917	3.52	1.75	1904	17.6
Year	44.0	100	1911	—34	1917	43.62	3.02	1904	87.7

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Fulton County is a rolling and hilly upland, rising into a mountainous region on the northern border. Among the hills in the northern part of the county are many small lakes, which form a characteristic feature of the wilderness region of northern New York. Along the Sacandaga, which flows through the northeast corner of the county, occupying portions of the towns of Northampton, Broadalbin, and Mayfield, is an extensive swamp known as the "Vly," and said to contain an area of 13,000 acres. The principal tributary of the Sacandaga River is Mayfield Creek. The county is also drained by the Cayadutta, Caroga, East Canada, and numerous small creeks flowing into the Mohawk.

The greater part of the surface of the county is covered with drift deposits. Black River limestone, Trenton limestone, and Utica slate are found in several localities. In the northern part of the county an excellent building stone is found, which is suitable also for curbing and Belgian pavement blocks. The soil in the southern part and along the valleys is mostly a gravelly and clayey loam derived from the drift deposits, and decomposed slate, shales, and limestones. It is well adapted to pasturage, and in some localities produces good crops of grain. A large portion of the northern part is too rough for profitable cultivation, although much of it is suitable for pasturage.

DESCRIPTION BY TOWNSHIPS

BLEECKER: The surface is a hilly and mountainous upland, the highest summit in the northern part being Pinnacle, 2,514 feet above tide. In the valleys are several small lakes, the principal of which is Peck Lake on the southern border. The soil is thin and light, and in some places stony. Much of the land is wooded and lumbering is the principal occupation.

Products: Lumber, cordwood, oats, and potatoes.

Average values of farm land range from $3 to $15 per acre.

BROADALBIN: The surface is rolling, most of it being susceptible of cultivation. Kennyetto Creek flows through the center of the town. The northern part extends into the great Sacandaga swamp, which is annually overflowed, and in which the soil is alluvial. In other places the soil is largely a light, sandy loam.

Products: Milk, butter, potatoes, oats, corn, and buckwheat.

Average values of farm land range from $5 to $40 per acre.

CAROGA: The surface is rolling in the south and broken in the north. Numerous clusters of lakes lie in the central and northern parts of the town. Lumbering is the principal occupation in this town. The soil is light and sandy, much of it being unfit for profitable cultivation.

Products: Lumber, cordwood, oats, and potatoes.

Average values of farm land range from $3 to $15 per acre.

EPHRATAH: The surface is mostly a hilly upland, from 800 to 1,600 feet above sea level. The principal stream is Caroga Creek, which flows through the center of the town. The soil in the center and southwest is a sandy loam, mixed with clay in the south and southeast. In the north and northwest it is a light sand.

Products: Cheese, butter, hay, oats, corn, buckwheat, and potatoes.

Average values of farm land range from $5 to $50 per acre.

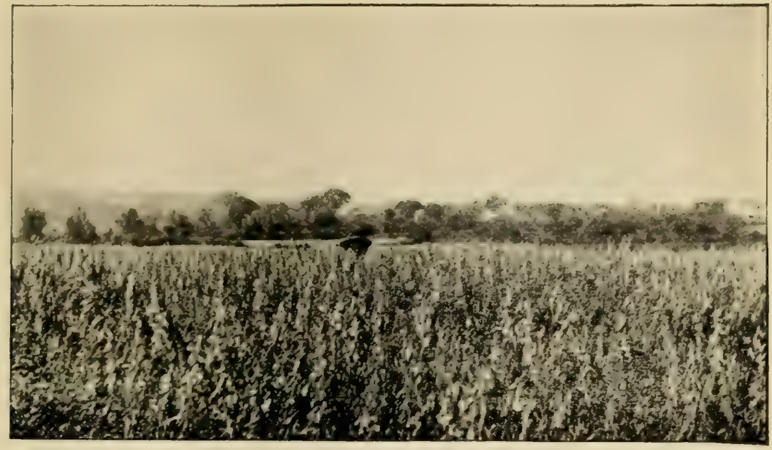


FIG. 73.— OATS ON FARM OF WM. H. O'NEILL, JOHNSTOWN, FULTON COUNTY

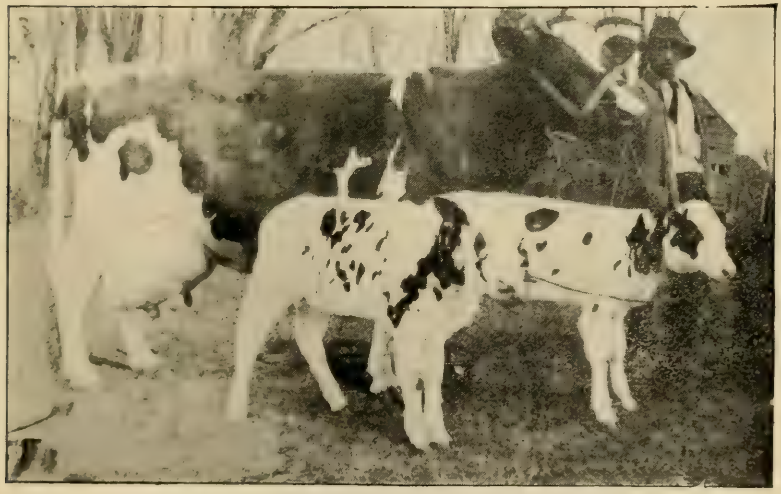


FIG. 74.— CANARY PALADIN VALE

JOHNSTOWN: The surface is hilly in the north and west, the remainder being mostly a rolling country. The principal stream is Cayadutta Creek. The soil is a clayey and sandy loam. The southern and eastern parts of the town are fertile and well cultivated.

Products: Market milk, hay, oats, silo corn, potatoes, and market garden products.

Average values of farm land range from $5 to $60 per acre.

MAYFIELD: The surface is broken in the northern part, with mountains rising 1,500 to 2,300 feet above tide. The central and southern parts are rolling and generally susceptible of cultivation. The principal streams are Stony Creek in the northwest, Mayfield Creek in the center, Kennyetto Creek in the southeast, and Cranberry Creek in the east. Limestone ledges crop out frequently, and several lime kilns are in operation. The soil is sandy and gravelly, in some places being strewn with boulders. The valleys are alluvial, occasionally intermixed with clayey loam.

Products: Milk, butter, and veal calves, potatoes, oats, silage corn, buckwheat, and rye.

Average values of farm land range from $5 to $30 per acre.

NORTHAMPTON: The surface is hilly in the north, the hills rising about 1,000 feet above the valley. In the southern part the Sacandaga swamp occupies several thousand acres. Sacandaga River flows southeast through the center of the town in a valley one-fourth to one and one-fourth miles wide. Vly Creek flows through the southern part. The soil in the valley is a rich alluvium and on the upland a sandy loam, stony in some places. In the southern part of the town are several limestone deposits.

Products: Milk and butter, oats, potatoes, buckwheat, and corn.

Average values of farm land range from $5 to $40 per acre.

OPPENHEIM: The surface is a hilly upland inclining gradually to the southwest. In the northeastern part the hills rise 1,200 to 1,400 feet above sea level. East Canada Creek flows south along the western border. Several other streams flow southwest through the town. The soil in the southwest is clay; in the southeast and center a clayey loam; and in the northern part a light sandy and gravelly loam. In some localities the surface is very stony.

Products: Market milk, hay, oats, corn, buckwheat, and potatoes.

Average values of farm land range from $5 to $60 per acre.

PERTH: The surface is gently rolling. Limestone crops out in several places, but the prevailing rock is slate. Chuctenunda Creek flows through the eastern part of the town. The soil is sandy or clayey loam.

Products: Market milk, hay, potatoes, oats, buckwheat, and corn.

Average values of farm land range from $5 to $60 per acre.

STRATFORD: The surface is a high, rolling and hilly upland generally 800 to 1,500 feet above sea level, rising in the extreme north to a height of 1,800 to 2,000 feet. East Canada Creek flows through the northwestern part of the town. In the northern part are several small lakes. The soil in the southwest and in the valley of East Canada Creek is a clayey loam; in other parts it is light, sandy, and gravelly. Much of the land is still wooded.

Products: Lumber, oats, and potatoes.

Average values of farm land range from $3 to $15 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The Fonda, Johnstown and Gloversville Railroad extends from Northville in the northeastern part of Fulton County southwest through Gloversville and Johnstown to Fonda in Montgomery County, where it connects with the main line of the New York Central and Hudson River Railroad. An electric road extends from Gloversville through Johnstown to Amsterdam and Schenectady.

Improved Highways

Improved highways extend in all directions from Johnstown and Gloversville, one of which passes to the northeast across the county into Hamilton. A state road also runs from Johnstown to

Fonda, where it connects with the state highway leading across the state. From Vail Mills on the county highway between Johnstown and Broadalbin an improved highway extends to Amsterdam. Another county highway extends south from Oppenheim to the county line.

The total number of miles of improved highways in Fulton County is 78, and 8 miles additional are under construction.

AVAILABLE MARKETS

The farm produce of Fulton County finds ready markets in Gloversville and Johnstown. These cities receive a portion of their vegetables by trucks from the Albany markets.

Milk and other farm produce is marketed, not only in Gloversville and Johnstown, but also in the rapidly growing city of Amsterdam and the villages of St. Johnsville and Dolgeville, which are easily available from certain sections of the county by means of improved highways.

Most of the milk produced is sold as market milk and cream, although a considerable amount of creamery butter and American cheese is manufactured.

The agricultural organizations are as follows:

Fort Dayton National Farm Loan Association.
Fulton and Montgomery County Beekeepers' Association.
Fulton County Dairymen's Cooperative Association, Inc.
Fulton County Dairymen's League.
Fulton County Farm Bureau Association.
Fulton Poultry and Pet Stock Association.
Granges: Six subordinate granges.
Mohawk Valley National Farm Loan Association.
Tri-County Beekeepers' Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Broadalbin, Gloversville, Johnstown, Mayfield, and Northville.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	205,845 acres
Number of farms	1,932
Per cent of farm land improved	48.0

LIVE STOCK PRODUCTS

Milk sold	1,978,035 gal.
Cream sold	2,658 gal.
Butter fat sold	6,200 lbs.
Butter produced	643,935 lbs.
Cheese produced	....
Eggs produced	415,573 doz.
Wool produced	1,083 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	4,064
Cattle	16,096
Sheep	2,027
Swine	4,344
Poultry	67,193

BEES

Number of colonies	1,265

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	3,526	121,209 bu.
Oats	8,801	218,517 bu.
Wheat	50	962 bu.
Barley	88	1,925 bu.
Buckwheat	2,451	44,879 bu.
Rye	196	2,350 bu.
Hay and forage	46,879	50,479 tons
Special crops:		
Potatoes	2,485	271,868 bu.
Vegetables, other than potatoes	579	....
Dry edible beans	14	354 bu.
Dry peas	1	28 bu.
Fruits:		
Apples	31,181 trees	33,937 bu.
Peaches and nectarines	48 trees	40 bu.
Pears	1,188 trees	920 bu.
Plums and prunes	907 trees	240 bu.
Cherries	736 trees	112 bu.
Quinces	14 trees	....
Grapes	684 vines	14,001 lbs.
Small fruits	76 acres	179,470 qts.

PRESENT STATUS OF AGRICULTURE

(From census of 1917 and census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,842	1,641
LIVE STOCK AND POULTRY		
Horses and mules	3,645	3,180
Cattle	14,020	12,806
Sheep	1,004	873
Swine	2,819	2,257
Poultry	67,893	46,990
BEES		
Number of colonies	1,352	1,128

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushel
Corn	2,270	1,789	22,678
Oats	9,103	6,766	159,087
Barley	258	265	3,571
Buckwheat	2,417	2,027	16,546
Wheat (winter)	97	158	1,500
Wheat (spring)	43	81	619
Rye	358	186	1,600

	1917	1918	
Hay and forage:	Acres	Acres	Yield
Alfalfa	138	106	316 tons
Other hay	38,232	33,247	43,282 tons
Corn (ensilage)	2,369	1,746	15,634 tons
Corn (fodder)	....	378	....
Special Crops:			
Field beans	235	313	1,157 bu.
Cabbage	104	133	1,324 tons
Potatoes	3,339	3,249	243,261 bu.
Roots raised for stock food	....	146	....
Canning factory crops	11	9	....
Other vegetables and garden crops	356	276	....
Fruits:			
Apples	900	865	7,035 bu.
Peaches	7	....	....
Pears	14	8	116 bu.
Plums	13	15	1,169 lbs.
Cherries	15	7	375 lbs.
Vineyard	2	3	245 lbs.
Small fruits	92	103	....

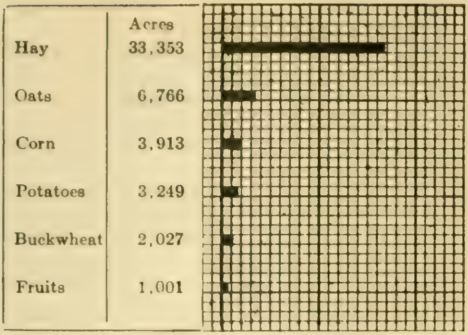
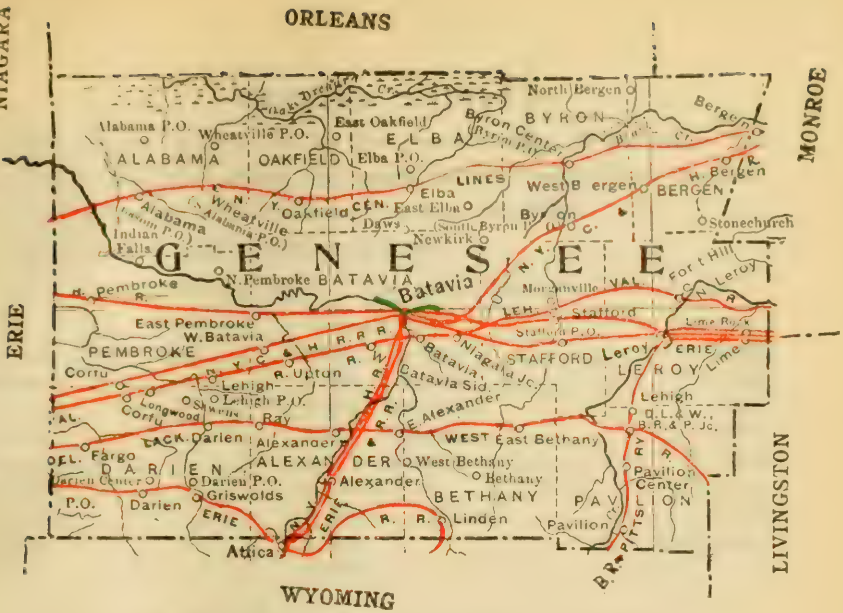
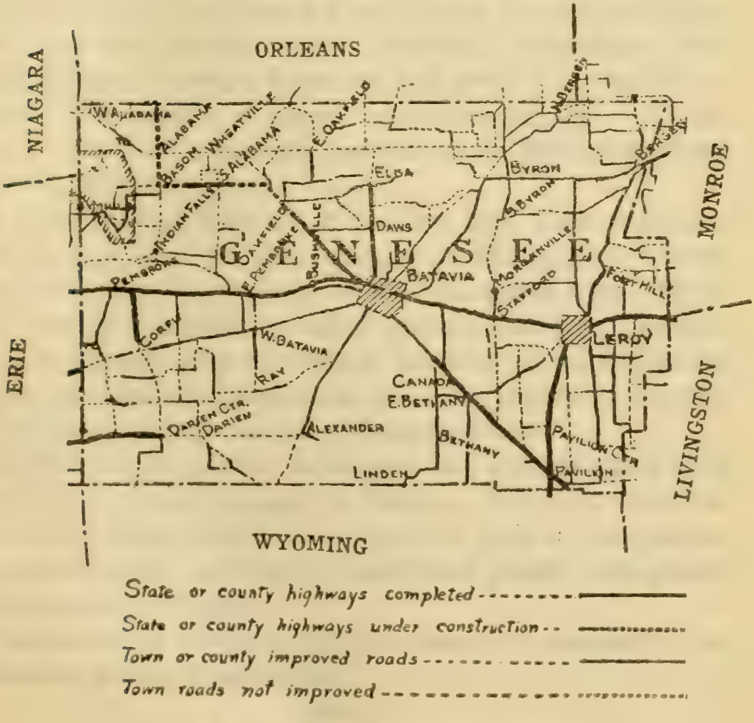


FIG. 75.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN FULTON COUNTY


ORLEANS
NIAGARA
MONROE
ERIE
WYOMING
LIVINGSTON
GENESEE
ALABAMA
OAKFIELD
ELBA
BYRON
BERGEN
PEMBROKE
BATAVIA
STAFFORD
LE ROY
DARIEN
ALEXANDER
BETHANY
PAVILION
Alabama P.O.
Wheatville P.O.
East Oakfield
Elba P.O.
North Bergen
Byron Center
West Bergen
Bergen
Stonechurch
Elba
East Elba
Oakfield
Alabama
Indian Falls
Newkirk
Daws
Byron
N. Pembroke
Batavia
Morganville
Stafford
Fort Hill
Leroy
Lime Rock
East Pembroke
W. Batavia
Corfu
Lehigh
Lehigh P.O.
Upton
Ray
Longwood
Batavia Sid.
Niagara Jc.
E. Alexander
Darien
Fargo
Alexander
West Bethany
East Bethany
Bethany
Darien Center
Darien P.O.
Griswolds
Darien
Attica
Linden
Pavilion
Pavilion Center
Lehigh
D.L.&W., B.R.&P. Jc.
N.Y. CEN. LINES
ERIE
B.R.&P.

Map of Genesee County, Showing Townships

Red, railroads; green, electric roads


ORLEANS
NIAGARA
MONROE
ERIE
WYOMING
LIVINGSTON
GENESEE
W. Alabama
Alabama
Basom
Wheatville
S. Alabama
E. Oakfield
Indian Falls
Oakfield
Elba
Byron
N. Bergen
Bergen
Daws
S. Byron
Morganville
Bushville
E. Pembroke
Pembroke
Batavia
Stafford
Fort Hill
Corfu
W. Batavia
Ray
Leroy
Canada
E. Bethany
Darien Ctr.
Darien
Alexander
Bethany
Pavilion Ctr.
Pavilion
Linden
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

GENESEE COUNTY

This county, which lies in the western part of the state, has an area of 317,440 acres. Its approximate length from north to south is 18 miles, and from east to west 28 miles.

Population is distributed as follows:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Batavia (city)*	13,278	Le Roy	5,830
Alabama	1,697	Oakfield	2,257
Alexander	1,403	Pavilion	1,615
Batavia	2,062	Pembroke	2,473
Bergen	1,716	Stafford	1,259
Bethany	1,394		
Byron	1,501	Total	40,707
Darien	2,013		
Elba	1,754		

---

* Batavia is the county seat.

HISTORICAL ASSOCIATIONS

Genesee County was formed from Ontario in 1802, embracing what is now eight counties, namely, Allegany, Cattaraugus, Chautauqua, Niagara, Orleans, Wyoming, and parts of Livingston and Monroe. The name is of Seneca origin, and signifies "pleasant valley." The whole region was included in the Holland purchase, and in the Morris Reserve.

In early colonial days all of western New York was called Tryon County, and was later changed to Montgomery County. After 1788, when the pre-emption line was agreed upon, the territory west of that line was called Ontario County. The name was again changed after the western boundary of the Phelps and Gorham purchase was determined, when the portion of the state west of that boundary was called Genesee County.

In 1801, Joseph Ellicott established the principal land office of the Holland Land Company at Batavia. This site, which was on the main Indian trail and in the direct path of immigration, was a wise selection, and one that contributed greatly to the growth and importance of Batavia.

A portion of the western part of the county is occupied by the Tonawanda Indian Reservation.

DEVELOPMENT OF INDUSTRY

Although the pioneers found that the land through this section produced grains and fruits abundantly, they experienced all the difficulties incident to a country with only distant markets and limited means of communication. In order to obtain cash they were obliged to resort to the products of the old-time asheries and distilleries at the expense of their agricultural operations. These products were hauled by teams to Albany during the first years of trade, bringing in return the goods for the frontier stores. In later years the canal opened up new markets, and gave them the advantage of more and cheaper goods and better prices for products; still greater changes were brought about by the railroads.

The early history of the fruit industry was mainly the growing of apples, pears, and peaches. It was not, however, until the city markets were made available by improved means of transportation that their production became of great importance.

Small fruits succeed well in nearly all parts of the county, and, where properly managed, are a source of profit to the growers. Other products are beans, potatoes, corn, wheat, hay, canning crops, and dairy products.

The feeding of winter lambs is an important business in some sections, especially in the towns of Batavia, Bergen, Byron, and Le Roy.

CLIMATE AND RAINFALL

Climatological records for Genesee County are taken from the Elba station, which lies at an elevation of 750 feet. Average dates for the last killing frost in spring and the first in fall are May 11 and October 8, respectively, giving a growing season of 150 days.

The following table, which is compiled from observations begun in January, 1900, and continued for 15 years, shows both normal and extreme temperatures and precipitation:

Record of Temperature and Precipitation at Elba

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	23.6	70	1906	—16	1914*	3.86	1.80	1902	22.3
February.....	19.7	64	1906	—21	1914	3.12	1.10	1900	22.8
March........	31.4	80	1905	—7	1912	3.14	1.60	1900	12.9
April.........	42.9	88	1910	10	1904	3.25	1.50	1901	7.1
May.........	55.4	93	1908	24	1911	2.97	1.50	1910	1.4
June.........	64.0	93	1908	33	1912	2.45	1.47	1901	......
July..........	69.5	100	1911	44	1913*	3.81	4.10	1902	......
August.......	66.9	95	1914*	38	1915	2.93	3.00	1913	......
September....	61.4	95	1900	29	1913	2.42	2.70	1910	......
October.......	49.7	88	1900	19	1909	2.60	1.85	1914	0.6
November....	37.6	75	1900	6	1905	2.15	1.33	1900	5.6
December.....	26.5	64	1908	—13	1914	3.08	2.04	1907	17.4
Year.........	45.7	100	1911	—21	1914	35.78	4.10	1902	90.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is mostly level or gently undulating, the southern border being occupied by ranges of hills. These extend north from Wyoming County, and attain an elevation of about 1,000 feet above tide. A limestone terrace, bordered in many places by nearly perpendicular ledges, extends east and west through the county north of the center. At either side of the county this terrace ranges in height from 50 to 100 feet, declining toward the center to a height of 20 to 40 feet.

Tonawanda Creek enters Alexander from the south, flows northeast to Batavia, then turning to the northwest and continuing to the western border of the county. Its principal tributaries are Little Tonawanda and Bowens creeks. The other principal streams are Oak Orchard, Black, Murder, and Oatka creeks.

DESCRIPTION BY TOWNSHIPS

Alabama: The surface is level or gently undulating. The northern and western portions are covered by marshes which form a part of the Tonawanda Swamp. Oak Orchard Creek flows across the northeast corner, and Tonawanda Creek across the southwest. The soil is a gravelly and sandy loam, with a clay subsoil. Tonawanda Indian Reservation occupies a portion of the western part of the town.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $40 to $125 an acre.

ALEXANDER: The surface is hilly in the center and south, and rolling in the north. In the southwestern part the hills rise 1,100 feet above sea level. The town is drained by Tonawanda Creek and its tributaries, also by several smaller streams. The soil on the hills is a gravelly loam with clay subsoil, while in the valleys it is a rich alluvium.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, dairy products, and fruit.

Average values of farm land range from $40 to $125 an acre.

BATAVIA: The surface is level or gently undulating. A limestone ridge twenty to fifty feet high extends east and west through the northern part of the town. Tonawanda Creek is the largest stream. The soil is a deep, fertile sandy and gravelly loam with clay subsoil.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, dairy products, fruit, and mutton.

Average values of farm land range from $75 to $200 an acre.

BERGEN: The surface is gently undulating, with a slight inclination toward the north. Black Creek flows east through the town. The soil is a gravelly and clayey loam.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, dairy products, and mutton.

Average values of farm land range from $60 to $140 an acre.

BETHANY: The surface is hilly in the south and rolling in the north. Black Creek flows north through the center, and Little Tonawanda Creek through the northwestern and southwestern

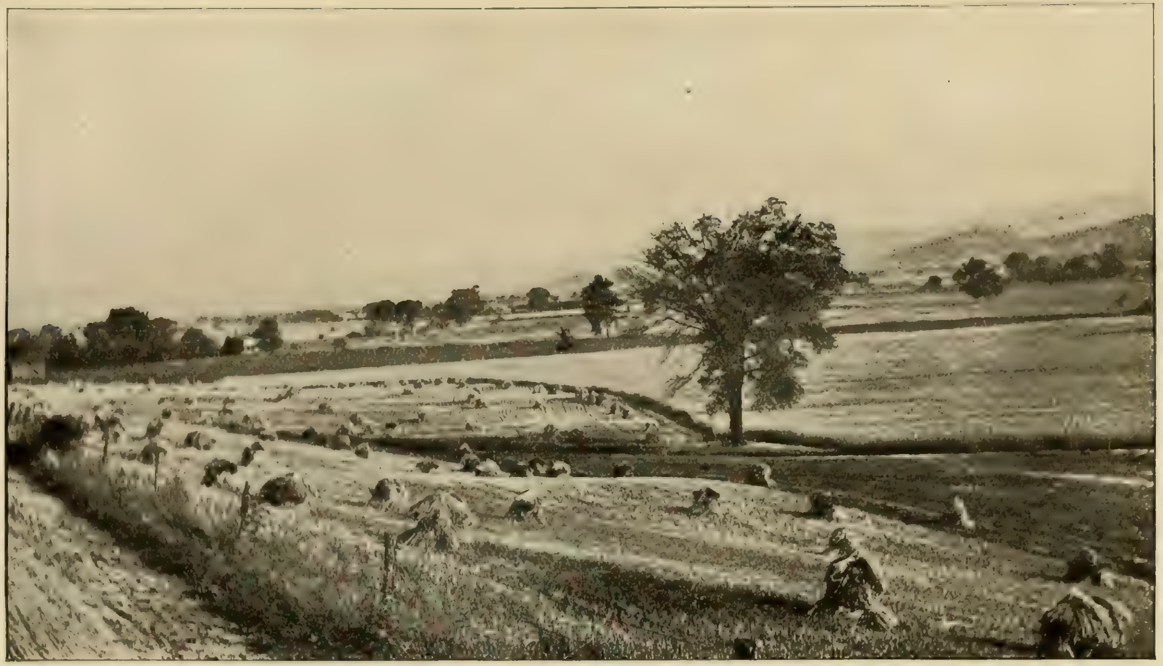


Fig. 76.— Farm View in Southeastern Genesee County

corners. The soil in the east is a dark gravelly loam, and in the west a heavy clayey loam. Bethany produces more fruit than any other town in the county.

Products: Fruit, beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $25 to $150 an acre.

BYRON: The surface is gently undulating, with a slight inclination to the north. The principal streams are Black Creek and its tributaries Spring and Bigelow creeks. The soil is a fine quality of gravelly and sandy loam.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, dairy products, and mutton.

Average values of farm land range from $60 to $140 an acre.

DARIEN: The surface is hilly in the south, and rolling in the north. Murder Creek and several small streams flow through the town. The soil in the north is a sandy and gravelly loam, and in the south a clayey loam underlaid by limestone.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $20 to $100 an acre.

ELBA: The surface is level or undulating. The town is drained by Oak Orchard Creek along the course of which, in the northern part of the town, extends Tonawanda Swamp. The soil is a fertile sandy, gravelly, and clayey loam.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $60 to $140 an acre.

LE ROY: The surface is level or gently undulating. A limestone ridge 40 to 100 feet high extends through the northern part of the town. Oatka Creek is the principal stream. The soil is generally a sandy or gravelly loam.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, dairy products, and mutton.

Average values of farm land range from $75 to $150 an acre.

OAKFIELD: The surface is level or gently undulating. Oak Orchard Creek, the principal stream, flows west through the northern part of the town, with a marsh extending along its course. The soil is a sandy, gravelly loam underlaid by clay.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $60 to $140 an acre.

PAVILION: The surface is hilly in the south and undulating in the north. Oatka Creek, the principal stream, flows north through the town. The soil is a fertile, gravelly loam underlaid by clay.

Products: Fruit, beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $50 to $125 an acre.

PEMBROKE: The surface is level or gently undulating. Tonawanda Creek flows through the northeast corner, and Murder Creek through the southern part. The soil is a sandy and gravelly loam intermixed with clay.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $50 to $125 an acre.

STAFFORD: The surface is undulating, sloping slightly to the north, and a limestone ridge extends east and west across the town. Black and Bigelow creeks flow north through the town. The soil is a productive sandy loam intermixed with clay.

Products: Beans, potatoes, corn, winter wheat, timothy, clover, alfalfa, canning crops, and dairy products.

Average values of farm land range from $60 to $150 an acre

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The main line of the New York Central between Rochester and Buffalo passes through Batavia, as does also the line from Canandaigua to Tonawanda. A branch of the same road extends southwest from Batavia to Attica. The West Shore line between Rochester and Buffalo crosses the northern tier of towns.

Both the Lehigh Valley and the Erie also center at Batavia, and make connections at Attica for Buffalo on the west and other points east and south.

The Delaware, Lackawanna and Western extends through the southern tier of towns and west to Buffalo.

The townships of Le Roy and Pavilion are crossed by the Buffalo, Rochester and Pittsburgh.

Improved Highways

The improved highway crossing the state from Albany to Buffalo passes through Le Roy and Batavia. A short section extends south from Le Roy, which when completed will run to Pavilion, and south into Wyoming County.

Additional lines extend as follows: Northwest from Pavilion to Batavia and Oakfield; north from Batavia to Elba, and south from Pembroke to Corfu.

There are in Genesee County a total of 59 miles of completed improved highways; 11 miles in addition are under construction.

AVAILABLE MARKETS

The principal market within the county is Batavia, the county seat. At this city is located the Massey-Harris Harvester Company, formerly known as the Johnston Harvester Company. Among other large manufacturing plants are included Chapins' Oil Can Factory; Baker Gun and Foraging Company; Batavia Woodworking Company; Batavia Rubber Factory, and the Wiard Plow Works. A state school for the blind is also located here.

A large part of the milk produced in the county is sent direct to Rochester, Buffalo, and other neighboring cities. Creamery butter is manufactured to some extent.

There are six canning factories in the county.

The agricultural organizations are as follows:

Batavia Cooperative Association, Inc.
Byron Cooperative Association, Inc.
Caledonia Tri-County Fair Association.
Genesee County Agricultural Society.
Genesee County Beekeepers' Association.
Genesee County Breeders' Club (Poultry).
Genesee County Cooperative Association, Inc.

Genesee County Dairymen's League.
Genesee County Farm Bureau Association.
Genesee County Sheep Breeders' Association.
Genesee National Farm Loan Association.
Granges: Pomona and thirteen subordinate granges.

EDUCATIONAL FACILITIES

Approved courses in agriculture and home making are given at Le Roy.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Alexander, Batavia, Bergen, Corfu, East Pembroke, Elba, Le Roy, Oakfield, Pavilion, and South Byron.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	289, 187 acres
Number of farms	3, 250
Per cent of farm land improved	81.4

LIVE STOCK PRODUCTS

Milk sold	3, 154, 254 gal.
Cream sold	17,917 gal.
Butter fat sold	369, 541 lbs.
Butter produced	589,931 lbs.
Cheese produced	1, 000 lbs.
Eggs produced	1,031, 286 doz.
Wool produced	25, 721 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	12, 988
Cattle	21, 674
Sheep	38, 916
Swine	12, 770
Poultry	166, 902

BEES

Number of colonies	2,339

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	9, 342	388, 719
Oats	21, 049	698, 648
Wheat	29,930	708, 786
Barley	2, 114	56, 997
Buckwheat	1, 175	21, 796
Rye	971	16, 778

	Acres	Tons
Hay and Forage	53,609	92,123

Special Crops:	Acres	Yield
Potatoes	9,585	1,217,791 bu.
Vegetables, other than potatoes	3,093	....
Dry edible beans	14,700	234,101 bu.
Dry peas	78	1,987 bu.

Fruits:		
Apples	300,865 trees	581,026 bu.
Peaches and nectarines	14,530 trees	5,706 bu.
Pears	85,035 trees	36,608 bu.
Plums and prunes	13,525 trees	8,916 bu.
Cherries	11,070 trees	3,758 bu.
Quinces	4,038 trees	1,975 bu.
Grapes	8,060 vines	165,429 lbs.
Small fruits	95 acres	130,784 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,726	2,703

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	11,413	10,989
Cattle	22,218	21,931
Sheep	25,058	32,630
Swine	9,588	9,833
Poultry	143,152	134,040

BEES

	1917 Number	1918 Number
Number of colonies	1,600	1,577

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Yield
Corn	6,111	4,544	84,028 bu.
Oats	11,242	16,804	665,658 bu.
Barley	2,025	4,287	118,764 bu.
Buckwheat	1,701	1,790	25,346 bu.
Wheat (winter)	28,277	29,870	581,915 bu.
Wheat (spring)	60	125	2,019 bu.
Rye	1,631	2,326	39,189 bu.

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	5,976	6,150	13,791 tons
Other hay	40,043	38,289	52,224 tons
Corn (ensilage)	5,474	5,438	25,047 tons
Corn (fodder)	....	1,281	....
Special Crops:			
Field beans	22,098	18,835	101,158 bu.
Cabbage	609	930	4,745 tons
Potatoes	6,564	7,107	731,534 bu.
Roots raised for stock food	....	190	....
Canning factory crops	1,752	2,094	....
Other vegetables and garden crops	631	714	....
Fruits:			
Apples	7,147	7,014	37,572 bu.
Peaches	171	256	5,006 bu.
Pears	934	958	28,371 bu.
Plums	109	218	54,961 lbs.
Cherries	70	108	16,499 lbs.
Quinces	....	13	296 bu.
Vineyard	10	34	4,784 lbs.
Small fruits	154	210	....

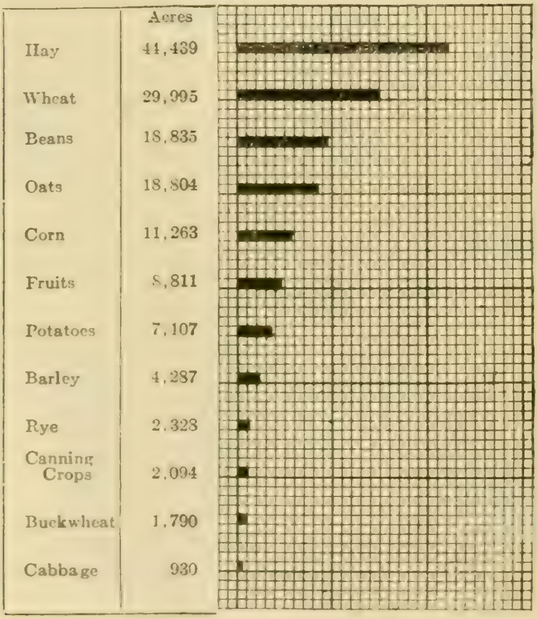
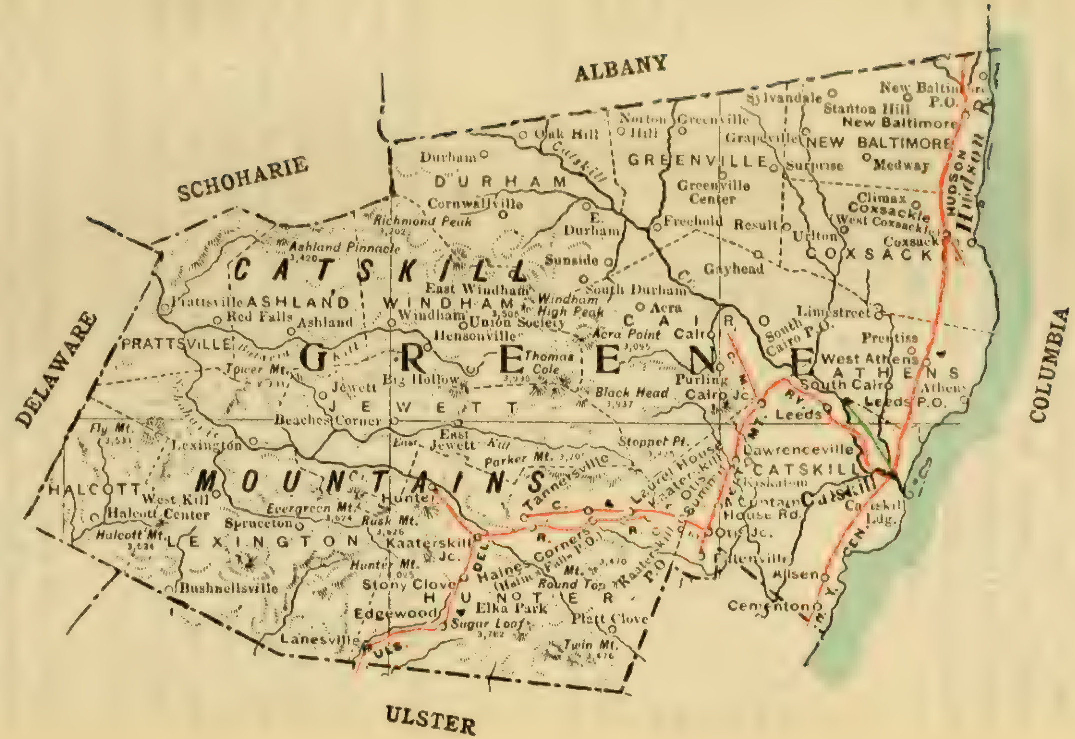


FIG. 77.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN GENESEE COUNTY


ALBANY
SCHOHARIE
DELAWARE
ULSTER
COLUMBIA
GREENE
CATSKILL
MOUNTAINS
Hudson R.
HUDSON
DURHAM
GREENVILLE
NEW BALTIMORE
COXSACKIE
ASHLAND
WINDHAM
CAIRO
ATHENS
CATSKILL
PRATTSVILLE
JEWETT
HALCOTT
LEXINGTON
HUNTER
New Baltimore P.O.
Sylvandale
Stanton Hill
New Baltimore
Medway
Surprise
Grapeville
Greenville
Norton Hill
Oak Hill
Durham
Cornwallville
Greenville Center
Freehold
Result
Urlton
Climax
Coxsackie
West Coxsackie
Coxsackie
E. Durham
Sunside
Gayhead
South Durham
Acra
Limestreet
South Cairo
Prentiss
West Athens
Athens P.O.
South Cairo
Leeds
Leeds P.O.
Cairo
Purling
Cairo Jc.
Richmond Peak
3,202
Ashland Pinnacle
3,420
Prattsville
Red Falls
Ashland
East Windham
Windham
Windham High Peak
3,506
Union Society
Hensonville
Acra Point
3,095
Thomas Cole
3,930
Black Head
3,937
Tower Mt.
Jewett
Big Hollow
Beaches Corner
East Jewett
Kill
Stoppet Pt.
Parker Mt.
Tannersville
Laurel House
Kaaterskill
Lawrenceville
Kiskatom
Mountain House Rd.
Catskill
Catskill Ldg.
Cementon
Allsen
Palenville
Fly Mt.
3,531
Lexington
West Kill
Halcott Center
Halcott Mt.
3,534
Evergreen Mt.
3,674
Spruceton
Rusk Mt.
3,626
Kaaterskill Jc.
Hunter
Hunter Mt.
4,025
Stony Clove
Haines Falls P.O.
Haines Corners
Round Top
3,470
Kaaterskill
Elka Park
Platt Clove
Edgewood
Sugar Loaf
3,782
Twin Mt.
3,476
Lanesville
Bushnellsville
R. R.
N. Y. C.

Map of Greene County, Showing Townships

Red, railroads; green, electric roads

GREENE COUNTY

This county is located in the southeastern part of the state about halfway between New York and Albany, the Hudson River forming the eastern boundary. Its area is 411,520 acres; its extent from north to south is 20 miles, and from east to west 35 miles. The population is shown in the following table.

POPULATION BY TOWNSHIPS

(Census of 1915)

Ashland	658	Hunter	2,944
Athens	2,725	Jewett	1,014
Cairo	1,967	Lexington	926
Catskill *	9,021	New Baltimore	1,840
Coxsackie	3,453	Prattsville	887
Durham	1,363	Windham	1,390
Greenville	1,550		
Halcott	353	Total	30,091

---

* Catskill, in the town of Catskill, is the county seat.

HISTORICAL ASSOCIATIONS

Greene County was formed from Albany and Ulster and named in honor of General Nathaniel Greene of the Revolution.

The first settlement was made in the eastern part of the county at an early period by immigrants from Holland. A few Dutch families from Schoharie County settled in the western part previous to the Revolution. During the war, being harassed by Indians and Tories, they returned to Schoharie. A few small isolated settlements were made in the interior of Greene County 150 years after the first settlements were made in the Hudson valley.

The great Hardenburgh patent granted by Queen Anne covered nearly all that portion of the county lying west of the mountains. The northern line of this grant was run at three different periods near the close of the eighteenth century by three different surveyors, no two of them agreeing to the width of whole farms.

The disagreement led to much litigation in the courts for over fifty years. Among the early settlers of the mountains were a number of the followers of Shay, who took refuge there on the suppression of his rebellion.

DEVELOPMENT OF INDUSTRY

Previous to the construction of the Erie Canal, Catskill commanded the trade of the adjacent counties on the west and of the southern tier through to Lake Erie, and some portions of northern Pennsylvania. It was a large wheat market, and on the falls of Catskill Creek were the most extensive flouring mills in the state. The canals and railroads built since that time, however, have limited the commercial transactions strictly to home trade.

A change scarcely less important has taken place in the industrial pursuits of the mountain towns. About 1817, on the discovery of improved methods of tanning leather, tanners rushed into the Catskill Mountains, purchased large tracts of mountain land covered with hemlock timber, and erected extensive tanneries. Villages of considerable magnitude sprang up quickly, and a little less than a century ago Greene County made more leather than all the rest of the state. When the supply of bark was exhausted, the proprietors gradually abandoned their establishments and extended the business further south. The result, however, was to carry cultivation of the land to the highlands, thereby opening an excellent dairy and wool-growing region. Sheep raising, which was formerly a prominent occupation, has become much less important within the past twenty-five years.

At about the time of the Civil War iron foundries were in operation at Oak Hill, in the town of Durham, where malleable iron was first produced in this country, coal and iron being hauled from the river at Catskill. The last foundry ceased operations about 1890.

Although generally best adapted to grazing, where properly cultivated the soil is moderately productive. In general we may say that the river towns east of the mountains produce fruit and grains, while the mountain towns produce dairy products, potatoes, and poultry products. The fruit industry in the eastern part is very highly developed, particularly small fruits.

The business of entertaining summer guests is an important one in the towns of Catskill, Cairo, Durham, Windham, Jewett, Hunter, Halcott, and Lexington.

At Athens is a ship-building yard that has been in business for nearly 200 years. Shale brick yards are operated at Athens and Catskill.

CLIMATE AND RAINFALL

The meterological station for Greene County is located at Athens, at an elevation of 170 feet. The present observer is Mrs. E. C. Brooks.

The average dates for the last killing frost in spring and the first in fall are May 28 and October 10, respectively, giving a growing season of 165 days.

The following table covers the period from 1902 to 1918:

RECORDS OF TEMPERATURE AND PRECIPITATION AT ATHENS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	25.0	62	1906	—21	1904	2.50	1.52	1917	9.9
February	22.8	60	1903	—18	1918	2.66	4.10	1915	12.5
March	34.8	82	1905	—6	1916	3.11	1.68	1913	9.7
April	47.4	90	1915	18	1911	2.98	1.86	1909	2.1
May	59.1	94	1914*	28	1903	2.88	3.16	1910	T.
June	66.0	95	1904	38	1913*	3.60	2.74	1904	......
July	72.1	102	1911	45	1912	3.21	2.48	1915	......
August	69.5	103	1918	42	1912	4.11	2.66	1911	......
September	63.1	95	1914	30	1914	3.54	4.02	1904	......
October	52.2	84	1914*	23	1905	3.74	4.01	1903	0.1
November	39.7	74	1914	6	1914	1.93	1.86	1907	2.2
December	27.4	67	1908	—19	1917	3.23	2.40	1915	12.4
Year	48.3	103	1918	—21	1904	37.49	4.10	1915	48.9

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The greater part of the Catskill Mountain region, so familiar in the writings of many authors and poets, is included within the limits of Greene County. The southern part of this county includes the main range of the Catskill Mountains, several peaks rising from 3,000 to 4,000 feet above tide. From the main range a spur of mountains extends through the county in a northwesterly direction, separating the towns of Durham and Cairo from Windham and Hunter and dividing the county into two nearly equal parts. This ridge is 2,500 to 3,000 feet above tide. An irregular line of bluffs extends along the Hudson with an average elevation of about 100 feet. Parallel to these bluffs and two to four miles farther west is a range of hills 500 to 700 feet above the river. Between this ridge and the east side of the Catskills the surface is rolling or hilly, gradually sloping toward Catskill Creek.

The principal streams are the Hudson River, which forms the eastern border; Schoharie Creek and tributaries, draining the west slope of the mountains; and Catskill Creek and its principal tributary, the Kaaterskill, draining the east slope. Small branches of these streams flow through narrow, rocky ravines that break entirely through the mountains and form passes locally known as "cloves." In many places these ravines are bordered by naked cliffs nearly perpendicular, and 1,000 to 1,700 feet above the streams.

The soil on the west slope of the Catskills is chiefly a reddish gravel or shaly loam extensively underlaid by hardpan. The surface is stony except along the streams, where the soil is fertile and productive. North and east of the mountains there is a variety of soil, including sections of gravel, clay, and sand loams.

DESCRIPTION BY TOWNSHIPS

Ashland: The north and south borders are occupied by two parallel spurs of the Catskill Mountains. In the north Huntersfield Mountain attains an elevation of 3,450 feet; in the south, Tower Mountain rises to a height of 2,980 feet. Batavia Kill flows westward through the town at the foot of the southern range. This stream is bordered on the north by steep bluffs 150 to 200 feet high. From their summits the surface gradually slopes upward to the foot of the ridge near the northern border of the town. The soil is principally a reddish shaly loam and stony loam, fertile in the valleys and of poorer quality on the hills.

Products: Dairy products.

Average values of farm land range from $10 to $50 an acre.

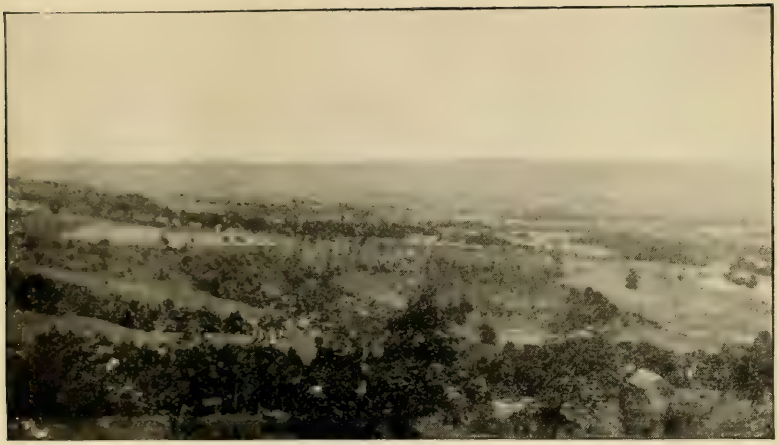


FIG. 78.— VIEW FROM EAST WINDHAM MOUNTAIN ROAD, OVERLOOKING TOWN OF DURHAM, GREENE COUNTY

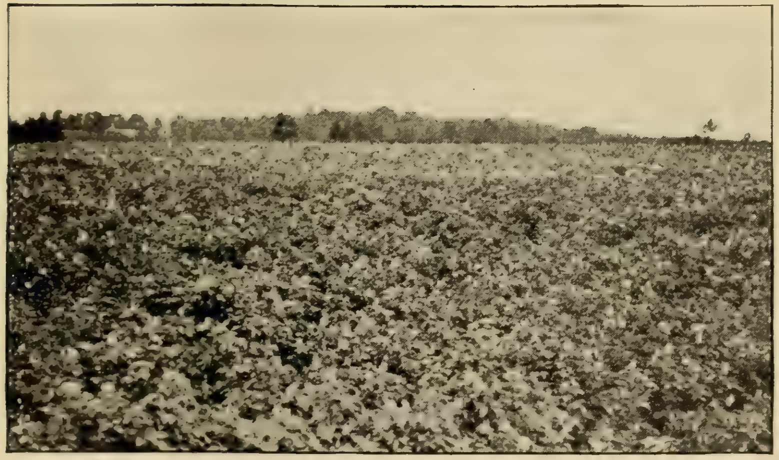


FIG. 79.— POTATOES ON FARM OF ELLIS BENTLEY, WINDHAM

This field of 1⅛ acres produced over 300 bushels, which is above the average yield for this section.

ATHENS: The surface is broken by several rocky ridges parallel with the Hudson. A range of high clay bluffs borders the river, and the high, rocky ridge known as Potuck Hill extends through the western part of the town. Near the river the soil is a tough clay bordered by sand. Elsewhere it is a sandy and gravelly loam of good quality.

Products: Fruit, hay, grain and poultry products.

Average values of farm land range from $25 to $200 an acre.

CAIRO: This town lies at the east foot of the Catskill Mountains, the crest of the mountains forming its western boundary. The central and eastern portions are broken by several high rocky ridges. Catskill Creek flows southeast through the town. The soil is a clayey, gravelly, and shaly loam, fertile in the valleys and of medium quality on the hills.

Products: Fruit, hay and grain.

Average values of farm land range from $10 to $150 an acre.

CATSKILL: The surface is broken by several rocky ridges parallel to the Hudson. These ridges are composed largely of shale and limestone. The Catskill Creek flows southeast through the northeast corner to the Hudson, receiving the Kaaterskill as its tributary. The soil is principally clay, with sections of gravelly and shaly loam of moderate fertility.

Products: Fruit, hay, grain and vegetables.

Average values of farm land range from $25 to $200 an acre.

COXSACKIE: A range of clay bluffs about 100 feet high extends along the river, and a range of hills of limestone formation 500 feet high extends through the center of the town. The surface is level or undulating in the east and hilly and broken in the west. The principal streams are the Coxsackie and Potuck creeks. The soil in the east is clay and sand; in the west it is a gravelly, shaly, and clayey loam. This is the principal wheat-growing section of the county.

Products: Fruit, hay, grain, and poultry products.

Average values of farm land range from $30 to $200 an acre.

DURHAM: The surface is hilly and broken, the northeast corner being occupied by the southern slopes of the Helderberg Mountains and the western border by the Catskills. The principal streams are Catskill Creek and its tributaries. The soil is generally shaly loam, with occasional sections of gravel. Durham leads in the number of sheep kept.

Products: Dairy products, fruit, and hay.

Average values of farm land range from $10 to $100 an acre.

GREENVILLE: The surface is hilly, the southern extremity of the Helderberg Mountains occupying the central and western parts of the town. Catskill Creek borders the southwest and receives the drainage of the town. The soil is chiefly a shaly loam of moderate fertility.

Products: Fruit, hay, grain, and dairy products.

Average values of farm land range from $10 to $100 an acre.

HALCOTT: The surface is mountainous and comprises a series of valleys in which rise the sources of the east branch of the Delaware. The soil is chiefly a gravelly loam of medium quality and stony, but is well adapted to grazing.

Products: Dairy products.

Average values of farm land range from $15 to $50 an acre.

HUNTER: The surface is rocky and mountainous, not more than one-fourth being susceptible of cultivation. Several of the highest peaks of the Catskills, including Hunter Mountain (4,025 ft.), Plateau Mountain (3,855 ft.), Sugarloaf (3,782 ft.), and High Peak (3,660 ft.), lie within the limits of this town. Two narrow valleys extend through the mountains and cross each other nearly at right angles in the center of the town. The first of these is the valley of Schoharie Creek and its southerly continuation, the Plattekill, and the second is the valley of the Kaaterskill and Stony Clove. The soil is generally a heavy clayey and shaly loam, very stony and not well adapted to agriculture. Farm products are largely used in providing for summer guests.

Average values of farm land range from $10 to $25 an acre.

JEWETT: The surface is largely occupied by high and rocky spurs extending from the Catskills. Several peaks rise to a height of 3,500 feet, West Kill Mountain being 3,925 feet high. Schoharie

Creek and its tributary, East Kill, are the principal streams. The soil is a heavy reddish gravelly loam of medium quality, often stony and rocky, and largely underlaid by tough hardpan. The elevation of farm land in this town varies from 1,800 to 2.000 feet.

Products: Dairy products.

Average values of farm land range from $10 to $50 an acre.

LEXINGTON: More than one-half of the surface is occupied by the lofty peaks and ridges of the Catskills. Schoharie Creek and its principal tributary West Kill are bordered by high ridges or mountains. Less than one-half the surface is susceptible of cultivation. The soil is a reddish shaly and gravelly loam, fertile in the valleys and of poorer quality on the hills.

Products: Dairy products.

Average values of farm land range from $15 to $75 an acre.

NEW BALTIMORE: The general surface is hilly and broken. A line of high rugged clay and slate bluffs rises from the river to a height of 100 to 200 feet, and a range of hills of limestone formation extends south through the center of the town. The western portion is comparatively level. The streams are usually small, and many of them flow through narrow, rocky ravines. The soil is chiefly a heavy clayey loam with occasional patches of sand and gravel. This town excels in the production of apples and pears.

Products: Fruit, hay, grain, and poultry products.

Average values of farm land range from $30 to $200 an acre.

PRATTSVILLE: The surface is principally occupied by broad mountain uplands bordered by steep rocky slopes. Schoharie Creek and Batavia Kill flow through wild and narrow mountain gorges. The soil is a heavy reddish gravelly and clayey loam, moderately fertile, and profitable only for grazing.

Products: Dairy products.

Average values of farm land range from $10 to $75 an acre.

WINDHAM: The surface is very broken and hilly. A high range of mountains extends along the southern border, at the northern foot of which flows Batavia Kill in a deep rocky valley. The central and northern portions are occupied by mountain spurs separated by narrow ravines. The soil is a heavy gravelly and clayey loam, of which disintegrated red shale forms a large part.

Products: Dairy products, potatoes and poultry products.

Average values of farm land range from $10 to $50 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The West Shore Division of the New York Central extends through the east side of the county, passing through Catskill.

The Ulster and Delaware railroad runs from Kaaterskill southwest to Ulster County, connecting with the main line at Phoenicia. A short branch runs from Kaaterskill Junction to Hunter.

Improved Highways

An improved highway runs along the east side of the county through Coxsackie and Catskill to Kingston and Newburgh. Macadam roads also extend from Greenville to Coxsackie, and from South Durham to Catskill. From Tannersville an excellent road extends to Hunter, from which point two roads extend — one to Windham, and another to Lexington and Prattsville, and through Delaware County to Oneonta and Binghamton. A state road between East Windham and Windham has recently been completed.

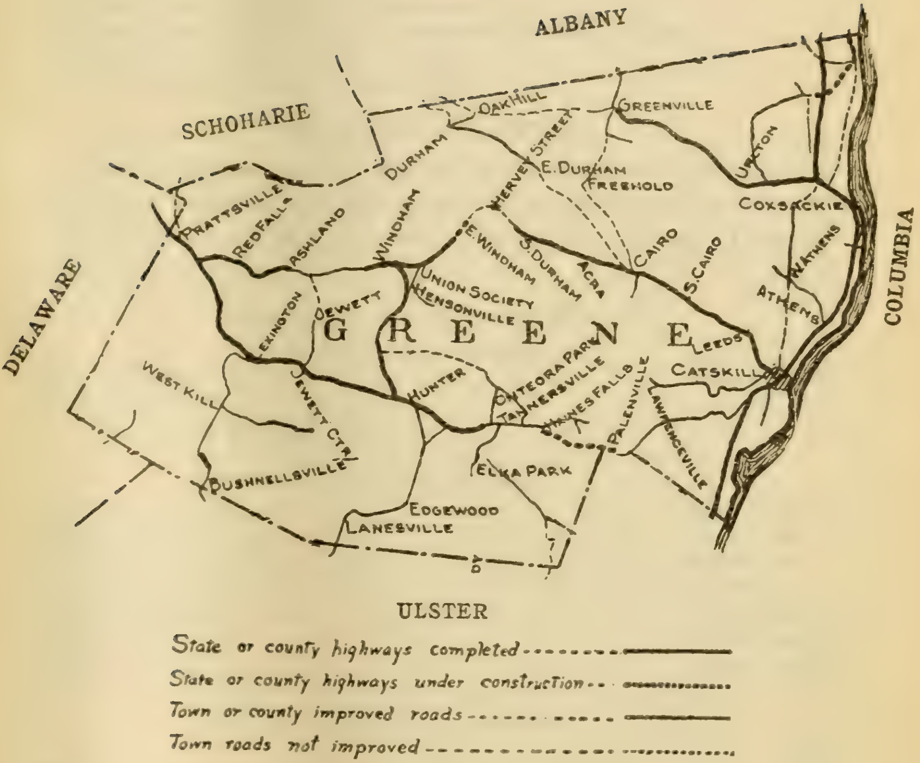
From Ashland an improved road leads west through Red Falls and connects with the Oneonta road.

There are in the county 90 miles of completed improved highways, with 13 miles additional under construction.

AVAILABLE MARKETS

While New York City is the principal market for Greene County, considerable produce goes to Hudson and Catskill and a large amount is marketed locally as supplies for summer boarders. The northeastern section sends some products to Albany.

Much of the milk produced is sold as market milk, a large portion being sent by direct shipment into Albany and neighboring cities. A large amount of cream is sold, and considerable butter is manufactured.


ALBANY
SCHOHARIE
DELAWARE
COLUMBIA
ULSTER
GREENE
OAK HILL
GREENVILLE
DURHAM
HERVEY STREET
E. DURHAM
FREEHOLD
EARLTON
COXSACKIE
PRATTSVILLE
RED FALLS
ASHLAND
WINDHAM
E. WINDHAM
S. DURHAM
ACRA
CAIRO
S. CAIRO
W. ATHENS
ATHENS
UNION SOCIETY
HENSONVILLE
DEWETT
LEXINGTON
LEEDS
CATSKILL
WEST KILL
JEWETT CTR.
HUNTER
ONTEORA PARK
TANNERSVILLE
HAINES FALLS
PALENVILLE
LAWRENCEVILLE
BUSHNELLSVILLE
ELKA PARK
EDGEWOOD
LANESVILLE
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

MAP SHOWING IMPROVED HIGHWAYS

The agricultural organizations in the county are as follows:

Athens Farmers' Cooperative Association.
Capital District Farm Loan Association.
Catskill Mountain Cooperative Association, Inc.
Delaware County National Farm Loan Association.
Farmers' Creamery Company of East Durham.
Granges: Pomona and six subordinate granges.
Greene County Agricultural Society.
Greene County Dairymen's League.
Greene County Farm Bureau Association.
Greene County Sheep Breeders' Cooperative Association, Inc.
Patrons of Industry: three associations.
Ulster National Farm Loan Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Athens, Cairo, Catskill, Coxsackie, Greenville, Hunter, Tannersville, and Windham.

STATUS OF AGRICULTURE IN 1910

(Taken from U S Census of 1910)

Land in farms	309, 124 acres
Number of farms	2, 654
Per cent of farm land improved	57.7

LIVE STOCK PRODUCTS

Milk sold	1,385, 859 gal.
Cream sold	6, 676 gal.
Butter fat sold	1, 662, 050 lbs.
Butter produced	316,060 lbs.
Cheese produced	4, 125 lbs.
Eggs produced	865, 395 doz.
Wool produced	5, 656 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	6, 174
Cattle	24, 571
Sheep	9, 708
Swine	8,245
Poultry	124, 075

BEES

Number of colonies	2. 244

SELECTED CROPS

	Acres	Bushels
Cereals:		
Corn	6, 727	189, 104
Oats	8,758	207, 583

	Acres	Bushels
Wheat	235	4,723
Barley	91	1,578
Buckwheat	5,068	92,452
Rye	4,048	58,468

	Acres	Yield
Hay and forage	72,556	62,748 tons

Special Crops:		
Potatoes	1,948	160,133 bu.
Vegetables, other than potatoes	1,452	....
Dry edible beans	18	360 bu.
Dry peas	4	57 bu.

Fruits:		
Apples	274,123 trees	630,061 bu.
Peaches and nectarines	22,624 trees	2,854 bu.
Pears	122,882 trees	75,902 bu.
Plums and prunes	19,242 trees	9,018 bu.
Cherries	9,927 trees	2,962 bu.
Quinces	652 trees	360 bu.
Grapes	13,139 vines	116,328 lbs.
Small fruits	85 acres	131,739 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,185	2,187
LIVE STOCK AND POULTRY		
Horses and mules	4,288	4,316
Cattle	20,588	19,731
Sheep	7,320	5,406
Swine	5,759	4,669
Poultry	182,924	124,159
BEES		
Number of colonies	2,054	2,602

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	4,884	5,806	118,091
Oats	7,849	7,180	180,984
Barley	119	141	1,353
Buckwheat	4,280	5,200	69,972
Wheat (winter)	754	810	12,266
Wheat (spring)	68	92	977
Rye	2,979	2,515	43,833

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	614	467	1,091 tons
Other hay	49,523	49,820	50,462 tons
Corn (ensilage)	1,539	1,127	9,131 tons
Corn (fodder)	....	709	....
Special Crops:			
Field beans	349	504	2,379 bu.
Cabbage	170	108	342 tons
Potatoes	1,453	1,876	120,681 bu.
Roots raised for stock food	....	128	....
Canning factory crops	16	4	....
Other vegetables and garden crops	587	641	....
Fruits:			
Apples	6,947	8,237	394,283 bu.
Peaches	342	590	5,038 bu.
Pears	1,794	1,808	52,937 bu.
Plums	93	77	28,845 lbs.
Cherries	119	199	75,027 lbs.
Quinces	....	6	12 bu.
Vineyard	24	18	18,380 lbs.
Small fruits	219	200	....

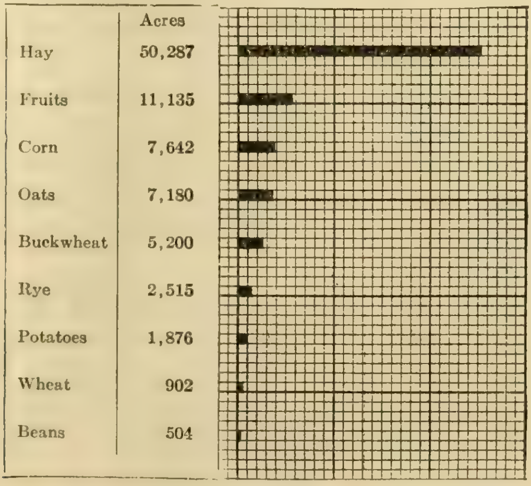


FIG. 80.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN GREENE COUNTY

HAMILTON COUNTY

This county lies in the great wilderness region in the northeastern part of the state. It has an area of 1,088,000 acres; its extent from north to south is approximately 60 miles, and from east to west 30 miles. The various townships are populated as follows:

Population by Townships

(Census of 1915)

Arietta	319	Long Lake	1,058
Benson	155	Morehouse	133
Hope	250	Wells	842
Indian Lake	1,086		
Inlet	219	Total	4,491
Lake Pleasant *	429		

---

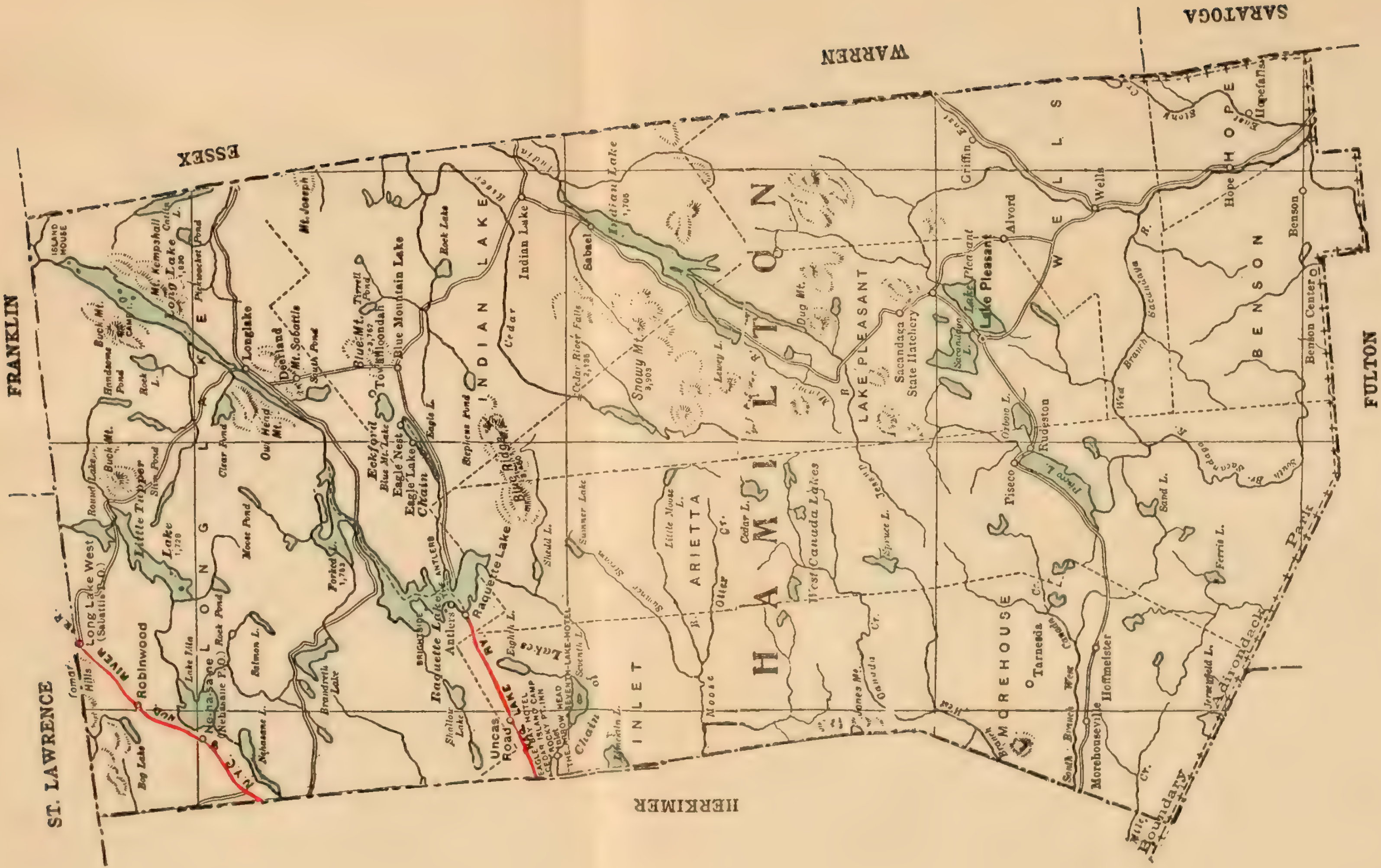
* Lake Pleasant, in the town of Lake Pleasant, is the county seat.

HISTORICAL ASSOCIATIONS

Hamilton County was formed from Montgomery, February 12, 1816, and named in honor of Alexander Hamilton. The region occupied by the Ausable Mountains, which extends also into St. Lawrence and Herkimer counties, was known by the natives as the "dismal wilderness."

Most of the territory in the county is included in the Totten and Crossfield purchase of 1773. Grants within the limits of the county were made in colonial times to Sir Jeffrey Amherst, Henry Balfour, and Thomas Palmer. Arthursboro in Morehouse was granted to Arthur Noble. The first settlement was made at about 1790.

In the early days of the county, Andrew K. Morehouse purchased large tracts of Adirondack forest land, among which were the tracts at Arietta and Morehouse. In 1832 he began to dispose of his holdings to settlers, and this part of the county became important as an agricultural section. At Piseco, in the town of Arietta, where a tract was laid out in village lots, a grist mill was erected. Previous to this time the settlers had been obliged to spend several days in taking their grains to the mills at Amsterdam or Schenectady, and even at certain times to Albany.


ESSEX
WARREN
SARATOGA
FRANKLIN
ST. LAWRENCE
HERKIMER
FULTON
HAMILTON
LONG LAKE
INDIAN LAKE
ARIETTA
LAKE PLEASANT
WELLS
HOPE
BENSON
MOREHOUSE
INLET
Long Lake
Longlake
Deerland
Little Tupper Lake
Raquette Lake
Blue Mountain Lake
Blue Mt.
Eagle Lake
Eagle Nest
Eckford Chain
Indian Lake
Cedar River Falls
Snowy Mt.
Sabael
Lake Pleasant
Sacandaga State Hatchery
Alvord
Wells
Griffin
Hope
Hope Falls
Benson
Benson Center
Piseco
Rudeston
Piseco L.
Morehouseville
Hoffmeister
Tarneeda
West Canada Lakes
Cedar L.
Spruce L.
Sand L.
Ferris L.
Jerseyfield L.
Fulton Chain of Lakes
Eighth L.
Seventh L.
Uncas Road
Antlers
Long Lake West (Sabattis P.O.)
Robinwood
Nehasane
Forked L.
Brandreth Lake
Shallow Lake
Mt. Kempshall
Mt. Sabattis
Mt. Joseph
Owl Head Mt.
Buck Mt.
Rock Lake
Adirondack Park Boundary
N.Y.C.
RIVER
RAQUETTE LAKE RY.

MAP OF HAMILTON COUNTY, SHOWING TOWNSHIPS

Red lines indicate railroads

In the early sixties, one Gerritt Smith owned a large tract of land in what is now known as township No. 3 of Totten and Crossfield's purchase, where he attempted the colonization of the negro. He granted forty-acre tracts of land to be cleared into farms. Owing to the cold climate, however, the venture was not successful, and the land eventually reverted to the state for non-payment of taxes.

DEVELOPMENT OF INDUSTRY

Although Hamilton is not generally well adapted to agriculture, the early settlers, particularly of Arietta and Morehouse, raised good crops of wheat, rye, barley, oats, potatoes, and hay. A large part of the county is adapted to grazing, and both sheep raising and dairying are of importance. Lumbering is a prominent occupation in the northern section. This section is much frequented during the summer vacation, as it furnishes excellent opportunities for hunting and fishing.

CLIMATE AND RAINFALL

The meterological station of Hamilton County is located at Indian Lake, the elevation being 1,705 feet above sea level. The present observer is Lester Savarie.

Average dates for the last killing frost in spring and the first in fall are June 11 and September 4, respectively, giving a growing season of 84 days.

The following table summarizes records covering the period 1899 to 1918:

RECORDS OF TEMPERATURE AND PRECIPITATION AT INDIAN LAKE

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	16.3	62	1906	—40	1904	2.95	1.10	1915*	22.0
February	14.8	62	1906	—42	1908	2.83	2.24	1900	15.9
March	26.2	81	1905	—27	1912	2.91	2.65	1900	15.6
April	39.2	86	1915	—6	1911	2.71	2.20	1913*	4.8
May	52.2	95	1911	12	1903	3.52	2.05	1916*	T.
June	59.5	98	1907	21	1906	3.88	2.13	1903	......
July	65.2	103	1911	28	1912	3.59	2.84	1902	......
August	62.4	100	1916	20	1909	3.47	2.15	1904	......
September	56.1	91	1913*	19	1904	3.83	2.00	1913*	......
October	45.6	87	1905	9	1903	3.93	2.87	1904	0.4
November	32.0	70	1901	—16	1914	3.21	2.25	1913	11.1
December	20.0	65	1905	—41	1917	3.19	1.50	1908*	19.9
Year	40.6	103	1911	—42	1908	40.02	2.87	1904	89.7

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is a rocky, mountainous, and hilly upland, about 25 per cent of that in the northern part still being covered with the original forests. The mountains are divided into several ranges. Within the valleys separating these ranges lie several remarkable chains of lakes, many of them connected by streams affording boat navigation. These lakes are generally long and narrow, and are bordered by steep banks and high mountain peaks. Although flowing in different directions, separated by high mountains and extending over an area of more than sixty miles, they have a nearly uniform elevation.

This whole region is underlaid by crystalline rocks, principally gneiss. Calciferous sandstone and Trenton limestone are found on the Sacandaga River; white limestone is found in several localities. Peat is abundant in the meadows extending along the valleys. Iron ore and graphite are also found. The soil is a light sandy loam, and, except in the valleys, is not susceptible of profitable cultivation. But little agriculture is carried on in the county.

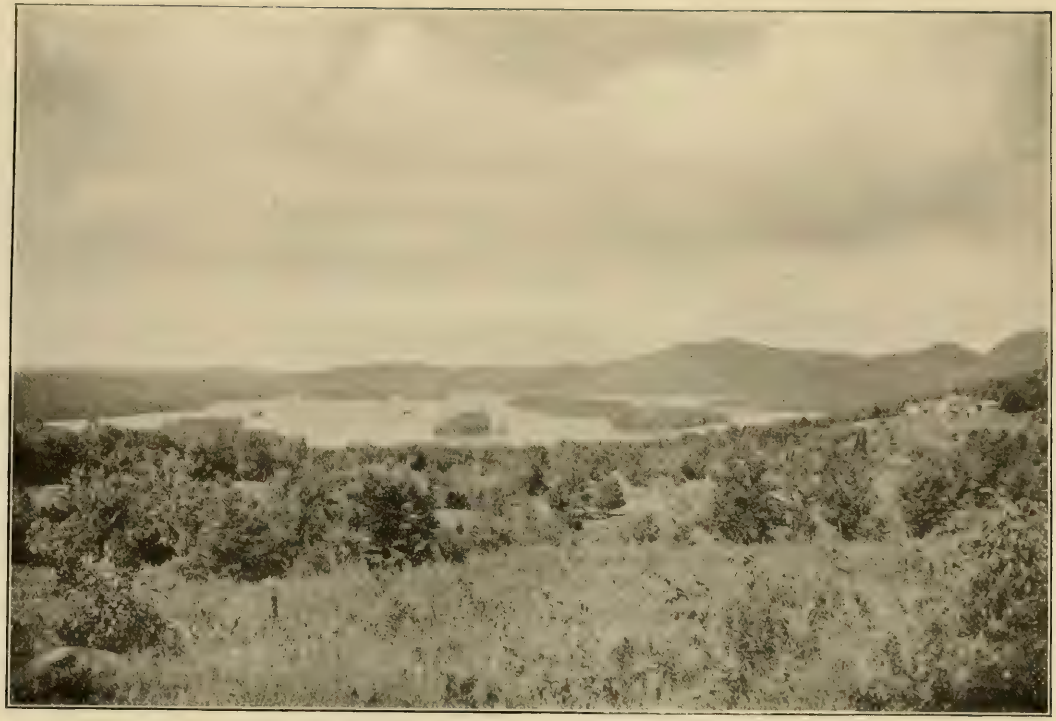


FIG. 81.— BLUE MOUNTAIN LAKE FROM BLUE MOUNTAIN

DESCRIPTION BY TOWNSHIPS

ARIETTA: Its surface is much broken, and it contains a great number of wild, picturesque lakes, Piseco being the largest, five miles in length. The principal streams are branches of the Sacandaga and Moose rivers, and West Canada Creek. A considerable amount of lumbering is carried on.

BENSON: The surface is rough and mountainous. The principal streams are the South Branch and other branches of the Sacandaga River.

HOPE: The surface is broken and mountainous. The Sacandaga River is the principal stream, the principal tributary of which is East Stony Creek. Between these two streams lies the main range of mountains.

INDIAN LAKE: The surface is broken and mountainous. The principal streams are Cedar and Indian rivers, both branches of the Hudson. Indian Lake, which lies at a height of 1,650 feet, extends about eight miles into the southern part of the town. Several smaller lakes, including Blue Mountain Lake, occupy portions of the valleys in various parts. There are a number of high peaks, among them being Snowy Mountain (3,900 ft.), Panther Mountain (3,865 ft.), and Blue Mountain (3,759 ft.).

LONG LAKE: The surface is very broken and numerous lakes are scattered through its forests. Among these are Long, Round, Little Tupper, and Raquette lakes. The latter with its ninety-nine miles of shore line and the forest-covered slopes bordering it, is especially beautiful. Round Lake, thirteen miles in length, is a well-known summer resort. The longest bridge in the county crosses this lake.

INLET: The surface is broken and mountainous. The principal streams are the north branch of West Canada Creek and the south branch of the Moose River. In the northern part lie some of the lakes belonging to the Fulton Chain, widely known as summer resorts.

LAKE PLEASANT: The surface is broken and mountainous, much of it still being a wilderness. Several lakes extend through the valleys, including Sacandaga Lake and Lake Pleasant.

The principal streams in the south are the north and west branches of the Sacandaga River. In the north are the Raquette and its tributaries. Graphite and quicklime are obtained.

Morehouse: The surface is hilly and mountainous, with numerous lakes extending through the valleys. The Fifth, Sixth, Seventh and Eighth lakes of the Fulton Chain in the northern part discharge their waters into Moose River. Several other lakes are drained into West Canada Creek.

Wells: The surface is intersected by mountain ranges separated by deep, narrow valleys. The highest peaks are 3,000 to 3,300 feet high, and are covered by masses of naked rock. Large deposits of iron ore are found, also traces of silver and gold. The three branches of the Sacandaga unite in the southern part, forming a large stream. The soil is light and sandy.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

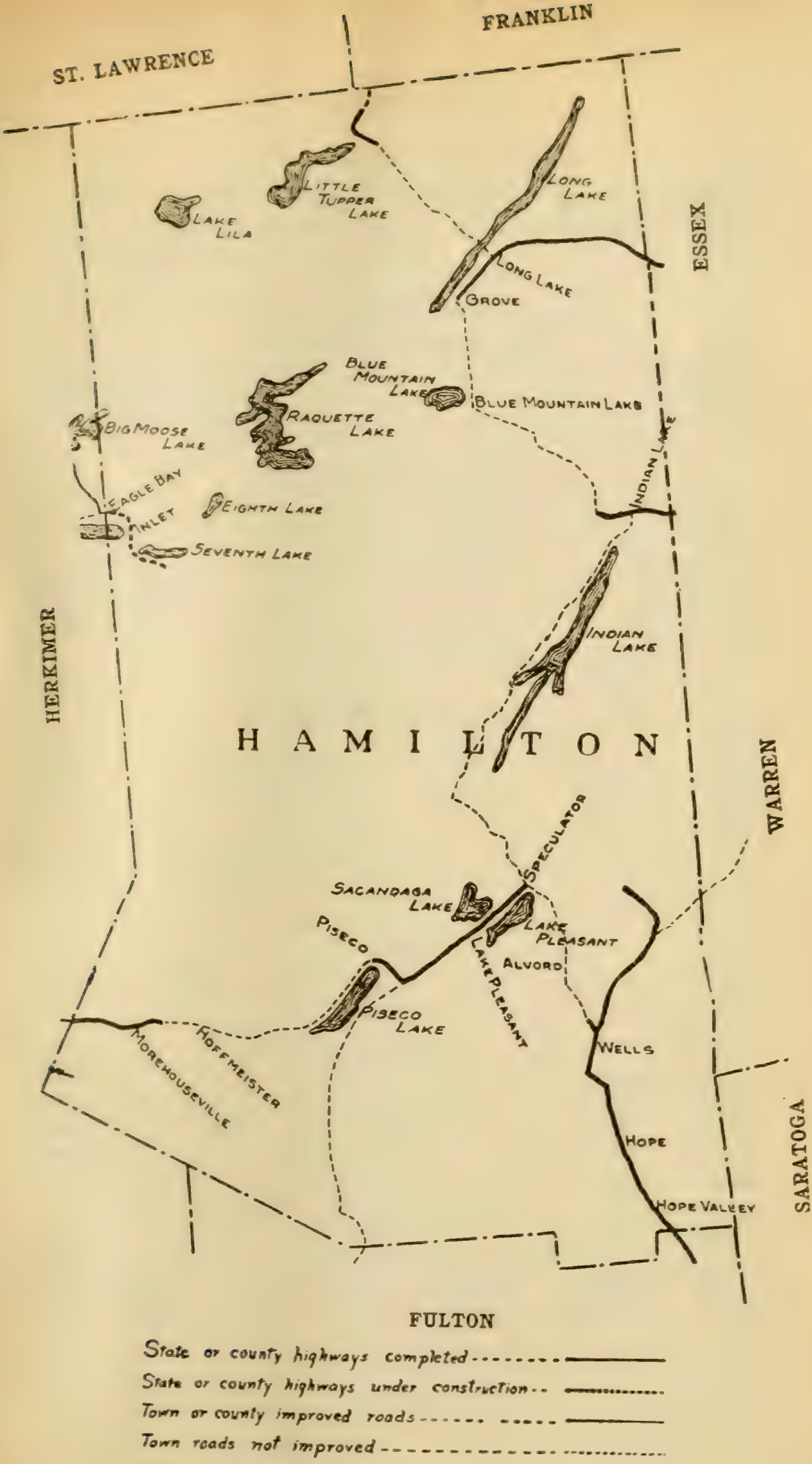
The Adirondack division of the New York Central crosses the northwestern part of the county, leading southwest to Herkimer, where it connects with the main line, and running northeast to all points north and east.

A branch known as the Raquette Lake Railway enters the west side of the county and extends to Raquette Lake.

Improved Highways

There are three sections of completed state and county highways in the southern part of the county: one in the southwest passes through Morehouseville; a second in the south central part extends from Piseco northeast to Speculator; a third in the southeast extends north from Hope Valley through Hope and Wells. In the northern part an improved highway extends east from Grove into Essex County.

Improved state and county highways in the county total 50 miles; 14 miles additional are under construction.


FRANKLIN
ST. LAWRENCE
ESSEX
LONG LAKE
LITTLE TUPPER LAKE
LAKE LILA
LONG LAKE
GROVE
BLUE MOUNTAIN LAKE
BLUE MOUNTAIN LAKE
RAQUETTE LAKE
BIG MOOSE LAKE
EAGLE BAY
INLET
EIGHTH LAKE
SEVENTH LAKE
INDIAN LAKE
INDIAN LAKE
HERKIMER
HAMILTON
WARREN
SPECULATOR
SACANDAGA LAKE
PISECO
LAKE PLEASANT
ALVORD
LAKE PLEASANT
PISECO LAKE
WELLS
HOFFMEISTER
MOREHOUSEVILLE
SARATOGA
HOPE
HOPE VALLEY
FULTON
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Indian Lake, Long Lake, and Wells.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	56,487 acres
Number of farms	470
Per cent of farm land improved	33.5

LIVE STOCK PRODUCTS

Milk sold	22,426 gal.
Cream sold	60 gal.
Butter fat sold	32,669 lbs.
Butter produced	77,413 lbs.
Eggs produced	63,328 doz.
Wool produced	1,479 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	816
Cattle	1,994
Sheep	2,515
Swine	377
Poultry	9,884

BEES

Number of colonies	248

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	102	3,186
Oats	403	8,396
Barley	1	40
Buckwheat	144	2,329
Rye	2	35

	Acres	Tons
Hay and forage	9,136	6,103

Special Crops:	Acres	Yield
Potatoes	418	46,324 bu.
Vegetables, other than potatoes	101	....
Dry edible beans	1	31 bu.
Dry peas	4	78 bu.

Fruits:		
Apples	4,793 trees	6,451 bu.
Plums and prunes	51 trees	12 bu.
Grapes	1 vine	25 lbs.
Small fruits	3 acres	2,072 qts.

PRESENT STATUS OF AGRICULTURE

(Census of 1917)

	Number
Farms for which reports were received	410

LIVE STOCK AND POULTRY

Horses and mules	604
Cattle	2,028
Sheep	2,252
Swine	748
Poultry	8,660

BEES

Number of colonies	136

SELECTED CROPS

Cereals:	Acres
Corn	149
Oats	561
Barley	1
Buckwheat	86
Rye	8

Hay and Forage:	
Other hay	6,835
Corn (ensilage)	39

	Acres
Special crops:	
Field beans	16
Cabbage	25
Potatoes	418
Other vegetables and garden crops	106
Fruits:	
Apples	536
Cherries	1
Vineyard	1
Small fruits	6

12

HERKIMER COUNTY

This county lies in the east central part of the state and extends south from the southern border of St. Lawrence County through the valley of the Mohawk River. Its area is about 933,760 acres. It extends approximately 20 miles from east to west and 85 miles from north to south.

The population is distributed as follows:

Population by Cities and Towns

(Census of 1915)

Little Falls (city)	13,022
Columbia	1,090
Danube	1,050
Fairfield	1,334
Frankfort	5,962
German Flats	12,809
Herkimer*	11,027
Litchfield	836
Little Falls	627
Manheim	3,885
Newport	1,724
Norway	597
Ohio	496
Russia	1,747
Salisbury	1,643
Schuyler	1,130
Stark	906
Warren	1,288
Webb	1,274
Wilmurt	227
Winfield	1,435
Total	64,109

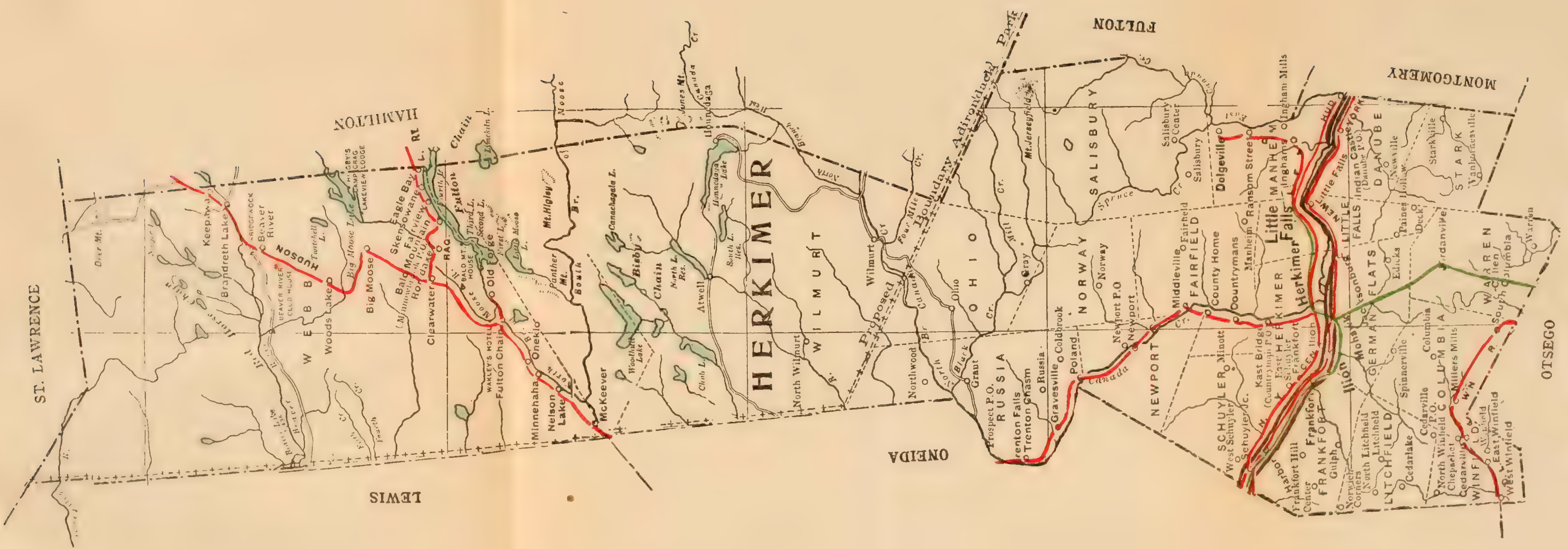
---

* Herkimer, in the town of Herkimer, is the county seat.

HISTORICAL ASSOCIATIONS

Herkimer County was formed from Montgomery in 1791 and named in honor of General Nicholas Herkimer, a veteran of the French and Indian War and the hero of the battle of Oriskany. The Herkimer homestead, which is being preserved by the state, is a fine colonial mansion overlooking the Mohawk River in the town of Danube.

As England was anxious to strengthen her colony of New York and as Governor Burnet was kindly disposed to the Palatines, who were eager to escape the wars and hardships in Germany, the governor obtained a patent for these people. When they settled in the territory now comprised in Herkimer County (1722), they found the land occupied by the Mohawk Indians.


ST. LAWRENCE
HAMILTON
FULTON
MONTGOMERY
OTSEGO
ONEIDA
LEWIS
HERKIMER
WEBB
WILMURT
OHIO
RUSSIA
NORWAY
SALISBURY
NEWPORT
FAIRFIELD
MANHEIM
LITTLE FALLS
DANUBE
STARK
SCHUYLER
HERKIMER
GERMAN FLATS
WARREN
FRANKFORT
LITCHFIELD
COLUMBIA
WINFIELD
Little Falls
Herkimer
Ilion
Mohawk
Frankfort
Dolgeville
Old Forge
Big Moose
Woods Lake
Beaver River
Brandreth Lake
Keepawa
Clearwater
Fulton Chain
Nelson Lake
McKeever
Minnehaha
Onekio
Atwell
North Wilmurt
Wilmurt
Northwood
Grant
Prospect P.O.
Trenton Falls
Trenton Chasm
Russia
Gravesville
Poland
Coldbrook
Cold Brook
Newport
Norway
Gray
Ohio
Middleville
Fairfield
Countrymans
Manheim
Salisbury
Salisbury Center
Ingham Mills
Indian Castle
Newville
Starkville
Van Hornesville
Jordanville
Paines Hollow
Ephratah
Cedarville
Spinnerville
Millers Mills
Columbia
South Columbia
Cedar Lake
North Winfield
East Winfield
West Winfield
Frankfort Hill
Frankfort Center
Gulph
Norwich Corners
North Litchfield
West Schuyler
Schuyler Jc.
East Herkimer
Kast Bridge
Fulton
Chain
Proposed Adirondack Park
Boundary
Honnedaga Lake
Canachagala L.
Bisby L.
Woodhull Lake
Mt. Higley
Panther Mt.
Bald Mt.
Eagle Bay
Fourth L.
Third L.
Second L.
First L.
HUDSON
Canada Cr.
Moose R.
Black R.

MAP OF HERKIMER COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads; brown, canals

The northern portion and small tracts in other sections remained in the possession of the state government until conveyed to Macomb and others.

After about thirty-five years of prosperous peace the French and Indian War broke out, during which the Palatine settlements on the north side of the Mohawk near the present village of Herkimer were twice attacked and destroyed. At the opening of the Revolution the colonists held a council with chiefs of the Six Nations at German Flats, and secured from them a promise that the Indians would remain neutral. However, through the influence of the Johnsons and other prominent tories, the Iroquois, with the exception of the Oneidas and Tuscaroras, violated their pledge and adhered to the English cause throughout the war.

During that time the county was repeatedly invaded. General Arnold came as far as German Flats in the summer of 1777 on his way to relieve Fort Schuyler; and from this place was sent the tory that spread the alarm among the savages of St. Leger and caused the abandonment of the siege. The following year General Brant with his body of tories and Indians invaded this section, burned the buildings, and killed the live stock or drove them away.

Settlements spread rapidly after the close of the war, and within fifteen years more than 10,000 persons from New England and the eastern counties of the state located in the central and southern portions of the county. Improvements in transportation were soon brought about through the Mohawk River and valley, which formed the natural route to the west. At Little Falls the portage was obviated by a canal with five locks and a length of 4,752 feet cut for more than half its length through the solid rock. This work was completed in 1795. With the development of the valley, as well as of the rich territory of the West, the necessity of better and more rapid means of transportation for freight and passengers became paramount and the construction of the Erie Canal eventually followed (1825). Within the next ten years a number of railroads were built in this section, all of which were consolidated into the New York Central in 1853.

Although these transportation facilities were of great value to the state and country at large, it cannot be said that the Mohawk valley shared in the benefit for a number of years. The opening to eastern markets of the fertile western lands worked seriously to the disadvantage of Herkimer and adjoining counties, until the later wonderful growth of the dairy industry.

DEVELOPMENT OF INDUSTRY

Herkimer County was the first to make cheese dairying a specialty, cheese being made in the county in a small way as early as 1800. In 1812-16 the largest herds, which numbered about forty cows each, were regarded as of extraordinary size. At this time dairy appliances were yet very crude. Later inventions and improvements, however, encouraged the industry and between 1850 and 1860 dairying began to assume great proportions. To David H. Burrell of Little Falls belongs the credit of having developed the machinery that is now the standard for American and Canadian cheese factories.

The state of Wisconsin has become able to produce cheese much more cheaply than it can be made in Herkimer County. For this reason, as well as because of the increased demands of New York City and the improvement in transportation facilities, much of the milk has within the last twenty years been sent to New York. In summer the surplus milk is manufactured into cheese or into condensed milk and butter.

Herkimer County is noted for its pastures of blue grass and white clover, on which its milk production largely depends. A great part of the county is well adapted for the growth of alfalfa. Considerable quantities of potatoes are grown for market. Oats and corn are important crops.

There are several important manufacturing interests, among which, besides the dairy machinery already mentioned, are the following:

Large tanneries are in operation at Little Falls, Middleville, and West Winfield. A large felt industry is located at Dolgeville, with smaller plants at Middleville and Little Falls. Extensive knitting mills operate at Little Falls, Herkimer, Mohawk, and Newport. Farm implements and road machinery are manufactured at Frankfort. Immense plants of the Savage Arms and Remington Arms plants are located in Frankfort township near Utica and in Ilion. Junket, rennet, and similar products are manufactured at Little Falls. Remington typewriters are manufactured at Ilion. Herkimer produces one-third of all the desks produced in the United States. Extensive paper and excelsior manufacturing and lumbering operations are conducted in the county.

CLIMATE AND RAINFALL

Climatological records for Herkimer County are taken from the Salisbury station, at an elevation of 1,300 feet above sea level. The present observer is Frank Barragan.

Average dates of the last killing frost in spring and the first in fall are May 22 and September 20, respectively, giving a growing season of 120 days.

The following table summarizes records from January, 1897, to December, 1918, inclusive:

RECORD OF TEMPERATURE AND PRECIPITATION AT SALISBURY

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	17.8	62	1906	—36	1904	3.33	1.51	1910	21.6
February	16.1	56	1903	—33	1914*	3.03	1.78	1910	19.4
March	27.4	75	1903	—16	1916	3.60	2.75	1913	17.7
April	41.0	86	1903	3	1897	3.24	1.78	1914	3.4
May	53.4	92	1911	17	1903	4.42	1.96	1906	0.5
June	61.2	92	1901	26	1913	5.05	2.55	1903	......
July	67.6	94	1911	36	1913*	4.76	2.85	1905	......
August	65.2	95	1913	34	1915*	4.71	4.60	1908	......
September	58.3	94	1898	22	1913*	4.24	3.10	1915	......
October	47.9	87	1905	15	1916	4.45	2.75	1903	0.3
November	34.0	70	1909	—6	1904	3.29	2.72	1913	10.9
December	21.0	64	1908	—35	1917	3.86	3.65	1905	19.6
Year	42.6	95	1913	—36	1904	47.98	4.60	1908	93.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Herkimer County is a hilly upland with a series of ridges extending generally north and south. The Mohawk River flows easterly across the southern end of the county. The valley is broad through the west side of the county to a point near Little Falls, where the stream breaks through a mountain ridge, the naked rocks rising on either side to a height of 500 to 600 feet. From this point to the eastern boundary of the county the river flows through a valley bordered by steep, high hills. East Canada Creek, which flows into the Mohawk, forms part of the eastern boundary. West Canada Creek flows from Hamilton County across Herkimer and forms part of the boundary between Herkimer and Oneida counties. Moose, Black, and Beaver rivers, which flow northward to Lake Ontario, have their sources in the northern part of the county; and, while numerous lakes and ponds are found, many of them are in a region that has been left largely in its primitive state.

That portion of the territory lying north of a line extending east from Hinckley is covered with primary rocks — granite, gneiss, feldspar, and hornblende. The same formation outcrops at Little Falls. Limestone, slate, and shales also appear. Iron appears in considerable quantities in the northern part of the county, and gold and platinum are mined near Dolgeville.

The soil is diversified; it includes sand and clay loams, alluvial soil in the Mohawk valley, and in some places deep deposits of drift. In the southern tier of townships Ontario types of soil predominate, which are rich in lime. Much of the rest of the agricultural portion of the county is a rich, dark soil derived from Mohawk shale mixed with lime.

DESCRIPTION BY TOWNSHIPS

COLUMBIA: The surface is rolling and moderately hilly, with an average elevation of 1,400 to 1,600 feet above sea level. The streams are small brooks, a portion of them flowing north to the Mohawk and the remainder flowing south to the Unadilla. The soil is a strong gravel and silt, generally fertile and rich in lime. Potato growing and dairying are the chief industries.

Products: Potatoes, alfalfa, oats, corn, and dairy products.
Average values of farm land range from $50 to $100.

DANUBE: The surface is hilly in the center, rising 400 to 800 feet above the Mohawk. It is broken by ravines on each side of the valley. Fine flats extend along the Mohawk on the northern border of the town. Nowadaga Creek is the principal stream. The soil in the northern part is a rich Mohawk loam; loam is also found in the south. It is well adapted to grazing and to the production of corn and hay.

Products: Alfalfa, oats, corn, and dairy products.

Average values of farm land range from $50 to $100 an acre.

Fairfield: The surface is a hilly upland, the center rising into a ridge nearly 1,000 feet above West Canada Creek and 1,500 feet above tide. It is well watered by small streams. The soil in the uplands is mostly a very rich clay; in the valleys it is gravel. Fairfield is far-famed for its wonderful blue grass pastures.

Products: Alfalfa, oats, corn and dairy products.

Average values of farm land range from $50 to $100 an acre.

Frankfort: The surface is a broad intervale rising into hills of moderate elevation on the southwestern border, the highest points being about 800 feet above the river. The streams are small brooks and creeks. The soil on the uplands is a clayey and slaty loam. On the flats it is an alluvial loam.

Limestone exists in the southwestern part, from which excellent lime is made.

Products: Oats, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

German Flats: A broad fertile intervale lies along the river, from which the surface rises gradually to a height of 300 to 400 feet and stretches away in a hilly upland. Fulmer Creek divides this upland into two nearly equal parts. The other streams are small brooks. The soil is a clayey and slate loam on the hills and gravel and alluvium in the valleys.

Products: Oats, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

Herkimer: From a wide intervale along the river, the surface gradually rises to the northern line of the town. West Canada Creek flows south through the town near the center, dividing the uplands into two distinct ridges. The soil on the hills is a gravelly loam and in the valleys a deep, fertile alluvium.

Products: Alfalfa, oats, corn and dairy products.

Average values of farm land range from $50 to $100 an acre.

LITTLE FALLS: The surface is a broken upland divided by the deep, narrow gorge of the Mohawk River. The Mohawk flows northeast through the town in a series of cascades and rapids. The soil is a rich loam, well watered, and of excellent agricultural quality.

Products: Oats, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

LITCHFIELD: The surface is elevated and moderately hilly, the average elevation being about 500 feet above the river. West Dry Hill and East Dry Hill are connected with elevated lands forming a watershed — the streams on the north side flowing to the Mohawk and those on the south side to the Susquehanna. The soil is rich in lime, of gravelly loam composition, and well adapted to alfalfa growing.

Products: Alfalfa, oats, corn and dairy products.

Average values of farm land range from $50 to $100 an acre.

MANHEIM: The surface rises gradually from the rich alluvial intervales along the Mohawk to a natural barrier, where it attains an elevation of 500 feet above the river. The principal streams flowing through the town are Crum and Gillett creeks; East Canada Creek flows along the east border of the town, furnishing excellent water power. The soil is a rich clay, well supplied with lime, forming a strong grass soil.

Products: Alfalfa, oats, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

NEWPORT: The surface is broken by ridges of highlands rising 400 to 500 feet each side of the narrow intervale of West Canada Creek. White Creek flows south through the eastern part. The soil is a clayey loam with some gravel in the valleys. The intervales support excellent fields of alfalfa and corn, while hay of a fine quality is produced on the hills.

Products: Alfalfa, oats, corn and dairy products.

Average values of farm land range from $50 to $100 an acre.

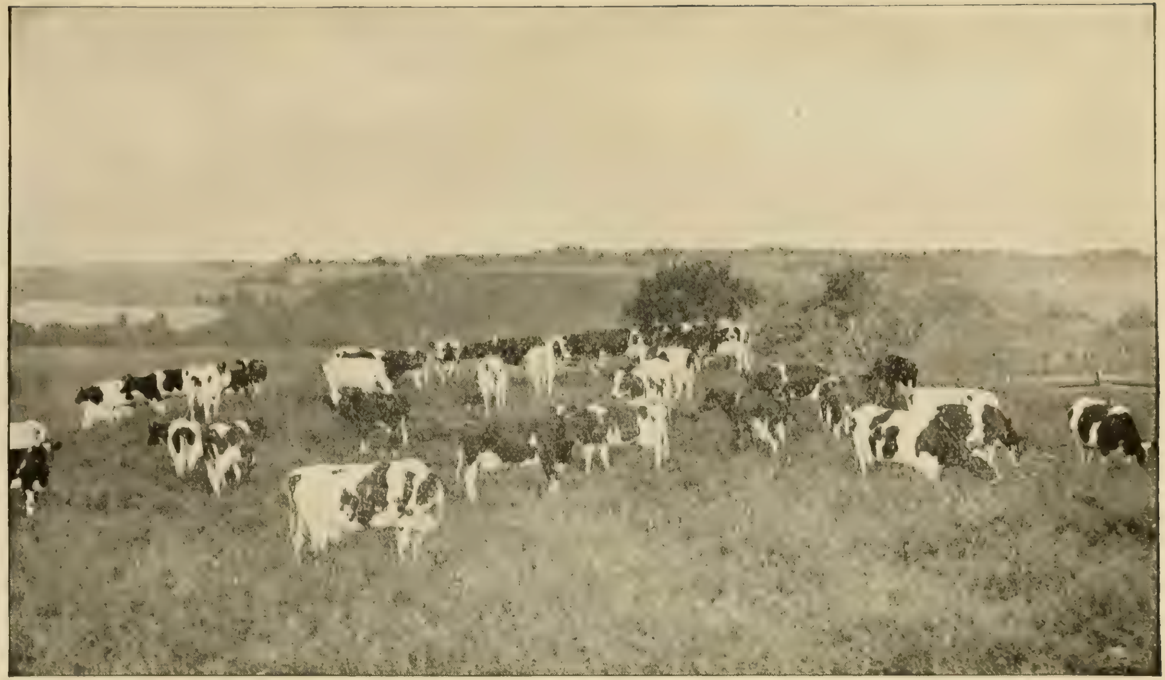


Fig. 82.— Holsteins Owned by W. D. Robens, Cold Brook, Herkimer County

NORWAY: The surface is elevated and rolling. It is well drained by the tributaries of West Canada Creek. The soil is sand in the northwest and rich loam in the south and east. It is admirably adapted to grazing. The first community cheese factory in America was located on Dairy Hill, in this town, and was operated by Colonel Jared Thayer.

Products: Oats, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

OHIO: The surface is moderately hilly, with an elevation of 1,200 to 1,500 feet above sea level. A range of high, steep hills extends through the northern part. It is drained by West Canada and Black creeks. There are several small lakes in the town. In the western and southern portions the soil is loam and gravel and suitable for tillage, while in the remaining portions it is light and sandy. Large dairies are kept in the valley of the Black Creek.

Products: Potatoes, oats, corn, hay and dairy products.

Average values of farm land range from $10 to $50 an acre.

RUSSIA: The surface is rolling and moderately hilly, and descends quite abruptly in the west to the valley of West Canada Creek. The hills reach a height of 1,300 to 1,500 feet above sea level. Black Creek flows across the northern part and Cold Brook flows across the southwestern part, affording excellent water power. The soil is sandy loam and clay. The Hinckley Reservoir, a water storage for the Barge Canal, is located in this town. One of the prominent herds of pure-bred Holstein-Friesian cattle in America, that of W. D. Robens, is located near Cold Brook.

Products: Alfalfa, potatoes, oats, corn and dairy products.

Average values of farm land range from $50 to $100 an acre.

SALISBURY: The surface is a broken and mountainous upland in the north; in the southern part it is hilly and well adapted to general farming. The principal streams are the East Canada Creek and Spruce Creek. The soil is a clay and sandy loam. In this town there are zinc and iron mines, as well as a small gold mine employing seven or eight men.

Products: Potatoes, oats, corn, hay and dairy products.

Average values of farm land range from $10 to $50 an acre.

SCHUYLER: The southern half is a rich clayey and gravelly loam flat, adapted to alfalfa, corn, grains, and hay. The surface of the northern part is hilly. The Hasenclever Mountains, which extend through the center, attain an elevation of 1,000 to 1,200 feet above tide. The streams are small and flow into the Mohawk, along which extends a wide, fertile intervale. On the hills the soil is slate and gravel and adapted to potato growing and grazing.

Products: Alfalfa, oats, corn and dairy products.

Average values of farm land range from $50 to $100 an acre.

STARK: The surface is hilly and broken, with a mean elevation of from 1,000 to 1,500 feet. The principal streams are the Otsquago and Ohisa. The northern part of the town is a slaty loam well adapted to grazing. The south and east portions are strong agricultural soils rich in lime and well adapted to alfalfa growing and hay. The soil is generally a clayey and gravelly loam in the valleys and gravelly loam on the hills.

Products: Oats, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

WARREN: The surface is hilly, the highest point being 1,400 to 1,600 feet above sea level. The principal stream is Ocquionis Creek, which is bordered by hills covered with rich gravelly loam. The soil is a sandy and clayey loam, nearly all highly cultivated and well adapted to alfalfa growing. Dairying is the chief industry.

Products: Oats, potatoes, corn, hay and dairy products.

Average values of farm land range from $50 to $100 an acre.

WEBB: The surface is rocky and mountainous. The principal streams are Beaver River and the north branch of Moose River. There are several lakes in the town, including part of the Fulton Chain. The soil is a sandy loam. The greater part is unfit for cultivation, and only in the valleys may pasturage be carried on profitably. . This is not an agricultural town.

WILMURT: The surface is rocky and mountainous. A number of lakes are included within the limits of the town. The south branch of Moose River flows across the northern part and Black River rises in the eastern part and flows west across the town. West Canada Creek crosses the southeastern part. The soil is a sandy loam. Being largely forest covered, Wilmurt is not an agricultural town.

Average values of farm land range from $10 to $50 an acre.

WINFIELD: The surface is moderately hilly and is drained by the east branch of the Unadilla River, the general elevation being about 1,200 to 1,400 feet above sea level. A range of hills in the southeast rises about 400 feet higher. The soil is of a rich gravelly type, well supplied with lime and admirably adapted to alfalfa growing and dairying. A tannery is operated in West Winfield.

Products: Potatoes, alfalfa, oats, corn and dairy products. Average values of farm land range from $50 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Two lines of the New York Central extend through the Mohawk valley across the center of the agricultural part of the county. From Little Falls a branch extends to Irondale. From Herkimer a line extends northward, passing through the eastern part of Oneida County and then crossing Herkimer, the principal line reaching to Ottawa and Montreal. At Carter a branch from this line runs east to Raquette Lake, and a short branch extends between Fulton Chain and Old Forge. The Delaware, Lackawanna and Western runs east from Richfield Springs across the southern part of the county to Utica.

Electric Roads and Waterways

An electric line running between Little Falls and Utica passes through the Mohawk valley, as does also the Barge Canal. Another electric line extends from Mohawk south through Otsego County.

Improved Highways

Improved highways connect all important points in the county. Two of these extend across the county on each bank of the Mohawk River. Other roads run north from Herkimer and Little Falls, connecting with Dolgeville, Salisbury, Fairfield, the villages of the rich dairy section of the West Canada Creek valley, Old Forge and other points. Roads built and now under construction run south from Little Falls, Mohawk, Ilion, and Frankfort, traversing the rich farm districts of the southern towns and reaching Richfield Springs, West Winfield, and other points. East and west roads connect those mentioned at all important points. A road from Utica extends north through Oneida County and enters Herkimer near McKeever, running from that point to Old Forge. Another from Utica extends south to West Winfield.

There are in the county 145 miles of completed improved highways, 12 miles additional being under construction.

AVAILABLE MARKETS

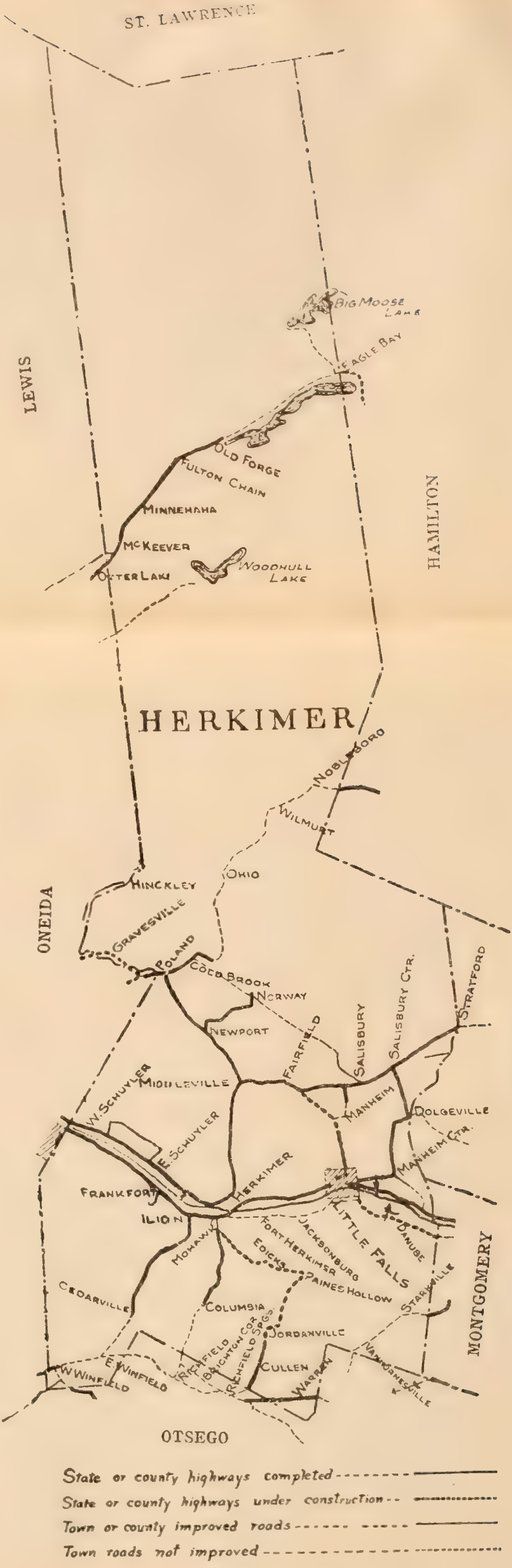
Little Falls, Herkimer, Ilion and Frankfort, Herkimer County, and Utica, Oneida County, are the principal local markets. In the city of Little Falls, dairy machinery is among the most important of its manufactured products. New York City consumes a large quantity of the milk produced.

About half the milk produced in the county is sold as market milk and cream. During the summer and the hunting seasons a considerable quantity is consumed within the county. Nearly 2,000,000 pounds of cheese is manufactured, also nearly 29,000,000 pounds of condensed and evaporated milk.

There are two canning factories in the county.

The agricultural organizations are as follows:

Fort Dayton National Farm Loan Association.
Granges: Pomona and twenty-two subordinate granges.
Herkimer County Agricultural Society.
Herkimer County Beekeepers' Society.
Herkimer County Dairymen's League.
Herkimer County Farm Bureau Association.
Herkimer County Holstein-Friesian Breeders' Association.
Herkimer County Milk Producers' Association.
Old Manheim Cheese Association.
Otsego and Herkimer Cooperative Association, Inc.
Van Hornesville Cheese and Milk Products Association.


ST. LAWRENCE
LEWIS
HAMILTON
BIG MOOSE LAKE
EAGLE BAY
OLD FORGE
FULTON CHAIN
MINNEHAHA
McKEEVER
OTTER LAKE
WOODHULL LAKE
HERKIMER
NOBLEBORO
WILMURT
ONEIDA
OHIO
HINCKLEY
GRAVESVILLE
POLAND
COLD BROOK
NORWAY
NEWPORT
FAIRFIELD
SALISBURY
SALISBURY CTR.
STRATFORD
FULTON
MIDDLEVILLE
W. SCHUYLER
E. SCHUYLER
MANHEIM
DOLGEVILLE
MANHEIM CTR.
FRANKFORT
HERKIMER
ILION
LITTLE FALLS
DANUBE
MOHAWK
FORT HERKIMER
JACKSONBURG
EDICKS
PAINES HOLLOW
STARKVILLE
MONTGOMERY
CEDARVILLE
COLUMBIA
JORDANVILLE
RICHFIELD
BRIGHTON COR.
RICHFIELD SPGS.
CULLEN
WARREN
VAN HORNESVILLE
E. WINFIELD
W. WINFIELD
OTSEGO
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Dolgeville, Frankfort, Herkimer, Ilion, Little Falls, Middleville, Mohawk, Newport, Old Forge, Poland, and West Winfield.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	371,969
Number of farms	3,092
Per cent of farm land improved	69.5

LIVE STOCK PRODUCTS

Milk sold	18,193,026 gal.
Cream sold	11,265 gal.
Butter fat sold	550,095 lbs.
Butter produced	189,820 lbs.
Cheese produced	4,100 lbs.
Eggs produced	852,326 doz.
Wool produced	1,460 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8,213
Cattle	64,914
Sheep	2,957
Swine	9,754
Poultry	134,528

BEES

Number of colonies	2,179

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	3,876	172,573
Oats	17,264	511,560
Wheat	46	1,220
Barley	610	16,699
Buckwheat	1,263	26,793
Rye	104	2,560

	Acres	Tons
Hay and forage	100,290	190,797

Special crops:	Acres	Yield
Potatoes	4, 167	520, 121 bu.
Vegetables, other than potatoes	1, 173	....
Dry edible beans	78	870 bu.
Dry peas	22	462 bu.

Fruits:		
Apples	83, 601 trees	136, 281 bu.
Peaches and nectarines	17 trees	13 bu.
Pears	4, 047 trees	4, 479 bu.
Plums and prunes	6, 157 trees	3, 853 bu.
Cherries	2, 581 trees	805 bu.
Quinces	6 trees	....
Grapes	971 vines	30, 946 lbs.
Small fruits	206 acres	539, 848 qts.

PRESENT STATUS OF AGRICULTURE

(From census of 1917 and census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2, 852	2, 637

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	7, 500	6, 689
Cattle	50, 621	44, 780
Sheep	1, 623	1, 138
Swine	5, 396	4, 267
Poultry	143, 422	117, 839

BEES

	1917 Number	1918 Number
Number of colonies	977	1, 734

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	2, 262	1, 783	67, 201
Oats	18, 944	9, 526	236, 427
Barley	801	899	14, 556
Buckwheat	1, 086	2, 224	19, 924
Wheat (winter)	78	85	1, 359
Wheat (spring)	69	288	2, 660
Rye	89	38	178

	1917	1918	
Hay and Forage:	Acres	Acres	Yield
Alfalfa	1,330	1,198	4,192 tons
Other hay	79,380	80,798	119,181 tons
Corn (ensilage)	8,197	5,996	39,981 tons
Corn (fodder)	....	1,968	....
Special Crops:			
Field beans	246	409	2,477 bu.
Cabbage	238	268	1,427 tons
Potatoes	3,595	3,489	209,967 bu.
Roots raised for stock food	....	295	....
Canning factory crops	143	106	....
Other vegetables and garden crops	548	672	....
Fruits:			
Apples	1,877	1,820	28,736 bu.
Peaches	....	3	11 bu.
Pears	39	20	503 bu.
Plums	51	29	13,276 lbs.
Cherries	41	26	14,722 lbs.
Vineyard	3	1	1,347 lbs.
Small fruits	239	143	....

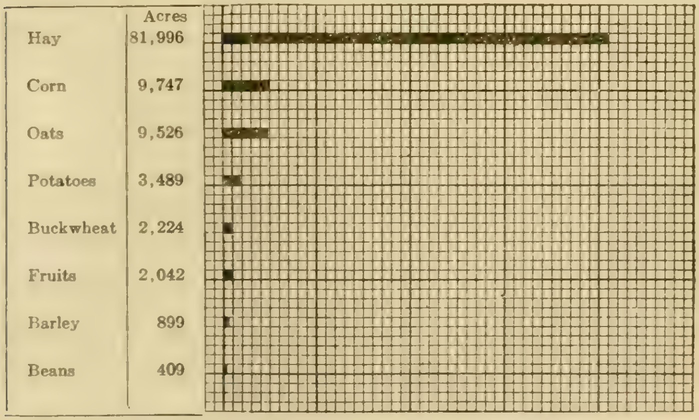


FIG. 83.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN HERKIMER COUNTY

JEFFERSON COUNTY

This county lies in the northern part of the state at the foot of Lake Ontario, which forms the western border, the St. Lawrence River separating it from the province of Quebec on the north. The county has an area of 815,360 acres. It extends approximately 45 miles from north to south and 35 miles from east to west. The population is distributed as follows:

Population by Cities and Towns

(Census of 1915)

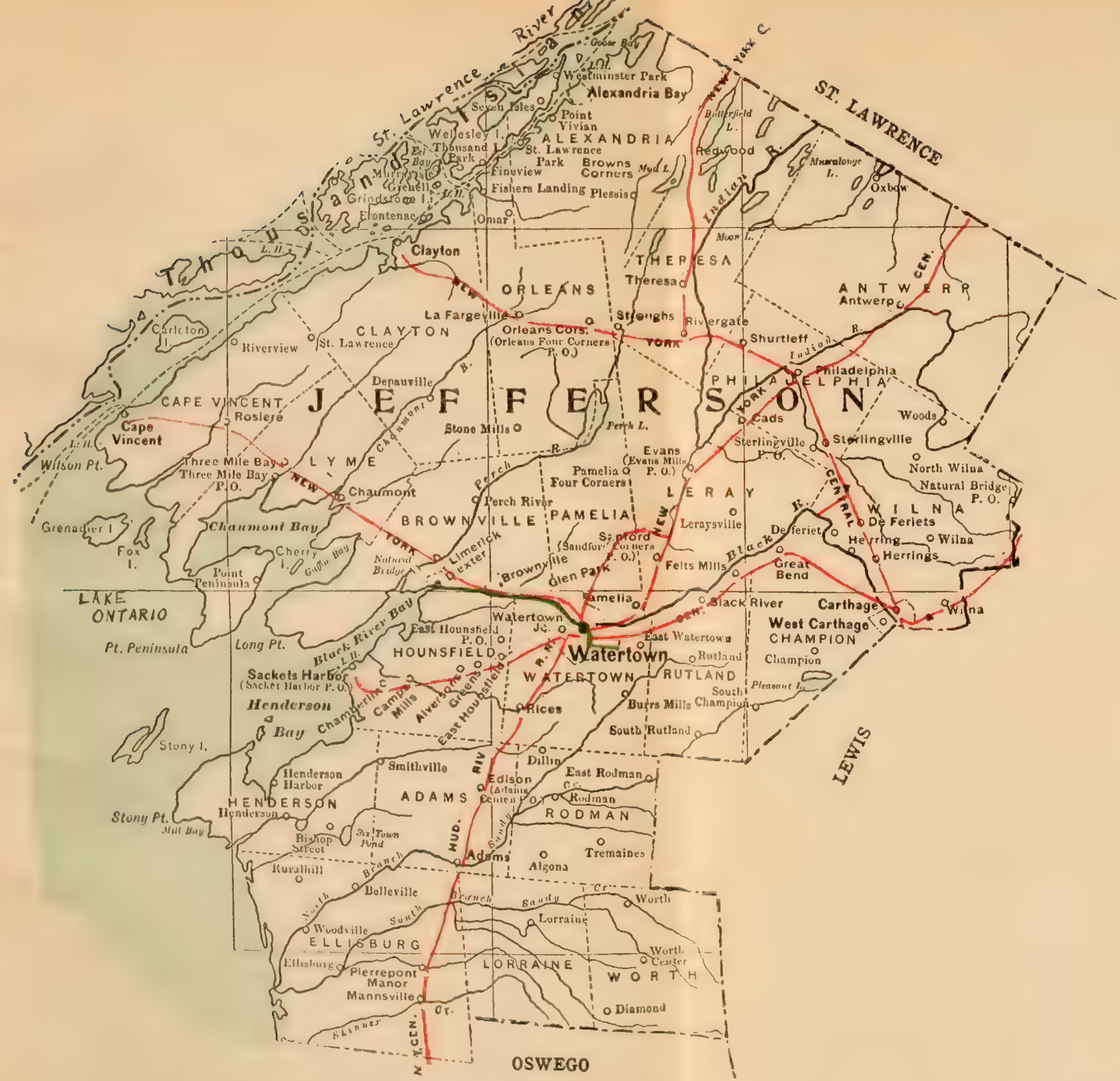
Watertown (city)*	26, 895	Lyme	1, 869
Adams	3,279	Orleans	2, 269
Alexandria	4, 355	Pamelia	980
Antwerp	2, 762	Philadelphia	1,593
Brownville	3, 861	Rodman	1, 167
Cape Vincent	2, 514	Rutland	1, 764
Champion	2, 990	Theresa	2, 060
Clayton	3, 976	Watertown	1, 179
Ellisburg	3, 487	Wilna	6,393
Henderson	1, 451	Worth	579
Hounsfield	2, 053		
Le Ray	2, 540	Total	81, 009
Lorraine	993		

---

* Watertown is the county seat. This city now has a population of 31,000.

HISTORICAL ASSOCIATIONS

Jefferson County was formed from Oneida, March 28, 1805, and named in honor of Thomas Jefferson. Its boundaries were changed in 1808, when a small portion was set off from Rodman to Lewis, and again in 1813, when a portion of Lewis County was annexed to the town of Wilna. It lies in the angle formed by the St. Lawrence and in the direct path of the great Indian waterway and trail. Just below Theresa village, deeply indented and shut in by the hills, is a place on the river known as the "Indian Landing." Up to this spot the red men paddled their canoes, when they disembarked, and carried the canoes over the rugged portage to the waters above the rapids in order to continue their journey toward the southeast.


St. Lawrence River
Thousand Islands
ST. LAWRENCE
JEFFERSON
LAKE ONTARIO
OSWEGO
LEWIS
Goose Bay
Westminster Park
Alexandria Bay
Seven Isles
Point Vivian
Wellesley I.
Thousand I. Park
ALEXANDRIA
St. Lawrence Park
Browns Corners
Eel Bay
Murray Isle
Grenell
Grindstone I.
Fineview
Fishers Landing
Plessis
Mud L.
Frontenac
Omar
Clayton
Butterfield L.
Redwood
Indian R.
Muskalonge L.
Oxbow
Moon L.
THERESA
Theresa
ANTWERP
Antwerp
ORLEANS
La Fargeville
Orleans Cors.
(Orleans Four Corners P. O.)
Stroughs
Rivergate
Shurtleff
Philadelphia
PHILADELPHIA
Carleton I.
Riverview
St. Lawrence
CLAYTON
Depauville
CAPE VINCENT
Rosiere
Cape Vincent
Wilson Pt.
Stone Mills
Perch L.
Cads
Woods
Sterlingville P. O.
Sterlingville
Three Mile Bay
Three Mile Bay P.O.
LYME
Chaumont
Chaumont R.
Perch R.
Evans (Evans Mills P. O.)
Pamelia Four Corners
North Wilna
Natural Bridge P. O.
Perch River
Grenadier I.
Fox I.
Chaumont Bay
BROWNVILLE
PAMELIA
LERAY
Leraysville
WILNA
De Feriets
Deferiet
Herring
Herrings
Wilna
Cherry I.
Guffin Bay
Point Peninsula
Natural Bridge
Limerick
Dexter
Brownville
Sanford
(Sandford Corners P. O.)
Glen Park
Felts Mills
Great Bend
Black R.
Black River Bay
Pamelia
Black River
Carthage
West Carthage
CHAMPION
Champion
Pt. Peninsula
Long Pt.
East Hounsfield P. O.
Watertown Jc.
Watertown
East Watertown
Rutland
HOUNSFIELD
WATERTOWN
RUTLAND
Sackets Harbor
(Sacket Harbor P. O.)
Camps Mills
Alverson
Greens
East Hounsfield
Rices
Burrs Mills
South Champion
Pleasant L.
Henderson Bay
Chamberlin C.
South Rutland
Stony I.
Smithville
Dillin
East Rodman
Henderson Harbor
Edison (Adams Center P. O.)
Rodman
HENDERSON
Henderson
ADAMS
RODMAN
Stony Pt.
Mill Bay
Bishop Street
Six Town Pond
Adams
Algona
Tremaines
Ruralhill
North Branch
Belleville
Sandy Cr.
South Branch
Worth
Lorraine
Woodville
ELLISBURG
Ellisburg
Pierrepont Manor
Mannsville
LORRAINE
WORTH
Worth Center
Diamond
Skinner Cr.
NEW YORK CENTRAL
R. W. & O.
HUD. RIV.
N. Y. CEN.
L. H.

MAP OF JEFFERSON COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads

With the exception of a small portion lying along the shore, this county is almost entirely embraced in the Macomb purchase of 1791. The first attempt to explore this region with a view of actual settlement was made in the autumn of 1793 by Frenchmen, agents of the Castorland Company. There was also a small tract ten miles square, one corner of which extended to the St. Lawrence at French Creek, now Clayton, which was known as "Penet's Square." This tract was named for Peter Penet, an imposter of Revolutionary times, who finally gained the confidence of the Oneida Indians. Upon hearing of his revelation in a dream that they were to give him a tract of land, these Indians reserved the land for him in the Treaty of 1788.

Within a few years after the occupying of Canada by the French, these people penetrated far into the interior and established small posts for the double purpose of securing the fur trade and converting the Indians to their religion. The Senecas and Cayugas, however, were jealous of the French and annoyed their trade considerably. In 1688 the Iroquois invaded the island of Montreal and destroyed great numbers of the French. During the French and Indian War, which in 1760 resulted in the complete subjugation of the former, the frontier again became alive with military operations, and the principal route between Canada and the Mohawk settlements passed through this county. Sacket Harbor, being the most important post on Lake Ontario, was made the headquarters of the northern division of the American fleet and here were fitted out several important expeditions against the British in Canada.

Between 1848 and 1852 a number of plank roads were built in the county and generally contributed much to its prosperity. Later, when railroads were built, the system was abandoned and the roads transformed into gravel roads or ordinary turnpikes.

DEVELOPMENT OF INDUSTRY

The first crops in Jefferson County, which were mostly corn and potatoes, were raised in the township of Ellisburg, in 1797. Cattle were brought from Oneida County to the town of Champion, allowed to graze during the summer season, and were then driven back and sold for beef. In the early days wheat, as well as corn, was a very important crop in Jefferson County. When the changed conditions resulted in the decrease of wheat production, the cultivation of oats came rapidly to the front. Barley was an important cereal crop between 1860 and 1890. Potatoes have never been largely raised, owing to the fact that soils suitable for their production have not been extensively developed. Hay has always been extensively grown, particularly since the decline in wheat production.

Water power being abundant, mills were numerous during the early years. These included grist mills, distilleries, saw mills, woolen mills, and tanneries. Present-day activities have supplanted these establishments by paper mills, hydro-electric plants, carriage factories, foundries, and machine shops.

As early as 1825 there were nearly 100,000 sheep within Jefferson County, and twenty years later the number had nearly doubled. Since then sheep raising has decreased, while dairy farming has increased to large proportions. Today dairying and the production of hay for market are the leading agricultural occupations. Cheese making was begun on the farms in 1834. In 1861 the co-operative cheese factory system was first established, and has since occupied an important place in the business of the county.

Barley, oats, corn, rye, and peas are staple products. Jefferson County leads in the production of oats, and excellent seed oats are produced. In the production of hay, not including alfalfa, the county stands second only to St. Lawrence. Peas and beans are grown to a considerable extent in the towns of Hounsfield and Adams.

Manufacturing is of considerable importance at Watertown and Carthage, particularly wood pulp and paper. Machinery, furniture, and flour are prominent among the Watertown manufactures.

CLIMATE AND RAINFALL

Climatological records for Jefferson County are taken from the Watertown station. The present observer is C. B. Parsons.

The average dates for the last killing frost in spring and the first in fall are May 7 and October 3, respectively, giving a growing season of 149 days.

The following table, compiled from observations covering the period 1890 to 1917, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT WATERTOWN

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	20.9	66	1906	—30	1904	1.78	1.90	1894	22.4
February	19.1	63	1906	—28	1914*	2.39	2.23	1908	22.6
March	30.1	76	1905	—14	1916	2.70	1.75	1900	14.3
April	44.2	86	1899	4	1898	2.31	1.22	1899	3.2
May	56.5	92	1911	21	1902	3.56	3.22	1906	0.1
June	65.3	98	1895*	33	1910	2.95	2.87	1905	......
July	69.9	99	1894	35	1898	2.87	2.65	1891	......
August	68.1	97	1916	37	1915*	2.50	4.28	1893	......
September	61.4	94	1895	26	1896	2.89	2.90	1906	T.
October	50.1	86	1898	18	1903*	3.08	2.28	1906	0.5
November	36.9	78	1896	—2	1900	2.85	2.99	1900	11.1
December	24.6	65	1901	—24	1914	3.13	2.29	1901	25.4
Year	45.6	99	1894	—30	1904	33.01	4.28	1893	99.6

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The southwestern part is low and marshy, but at a short distance from the lake the land rises in gentle undulations and farther inland by abrupt terraces to the most elevated part, 1,750 feet high, in the town of Worth. A plateau about 1,000 feet above the lake spreads out from the summits and extends into Oswego and Lewis counties. North of Black River, the largest stream of this section, the surface is generally flat or slightly undulating; in the extreme northeastern corner it is broken by low ridges parallel to the St. Lawrence. Small streams flowing into Lake Ontario and the St. Lawrence River drain a large part of the county.

Black River Bay is considered the finest harbor in Lake Ontario and is surpassed by none on the upper lakes for capacity, depth of water, and safety. Many islands in Lake Ontario and the St. Lawrence River, including the Thousand Islands, form part of this county.

The soil generally is of average fertility. The districts underlaid by limestone and slate, however, are exceedingly fertile and particularly adapted to dairying and raising spring grains. The intervales are also remarkably fertile, while the ridges are often naked rock. The soil over part of the sandstone is too thin for cultivation, but the barren region is comparatively limited.

North of the Black River the prevailing soil is clay, especially in the lower areas, although comparatively little clay is found south of the river. An area of several square miles in extent lies along the main highway and river between Watertown and Sacket Harbor. Silty loam is of considerable extent and importance in the county, especially north and south of Watertown. Elsewhere in the state, soils of this nature are highly prized for growing truck crops for canning, which might be grown in this section if facilities for handling such products were more largely developed.

DESCRIPTION BY TOWNSHIPS

ADAMS: The surface is rolling and generally inclined toward the lake. It is well watered by the North Sandy and Stony creeks. The soil, which is generally fertile, consists of a black mold, sandy loam, or a loam somewhat mixed with clay, and is underlaid by limestone with large outcroppings of this rock on high ground. There is very little waste land in the town; that which seems least fertile affords excellent grazing.

Products: Corn, oats, potatoes, peas, beans, barley, hay and dairy products.

Average values of farm land range from $10 to $100 an acre.

ALEXANDRIA: The surface is generally rough and rocky, except where underlaid by sandstone, when it is level with a thin clayey and sandy soil. This town includes the eastern part of Wells Island and a considerable portion of the Thousand Islands. It is watered by numerous small streams rising in the southern part of the town. Alexandria Bay has been a favorite summer resort for more than half a century.

Products: Hay, grain, corn, vegetables and berries.

Average values of farm land range from $30 to $100 an acre.

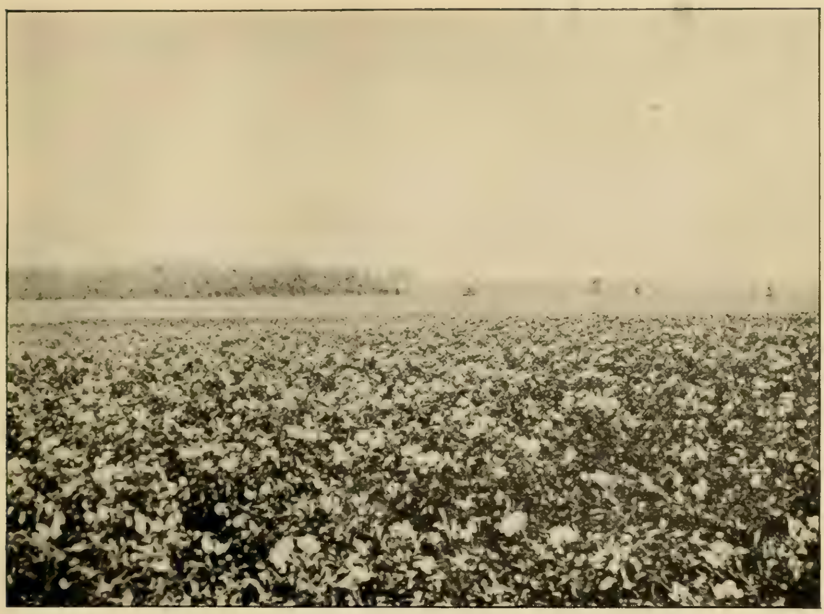


FIG. 84.— FARM VIEW NEAR LA FARGEVILLE — POTATOES IN FOREGROUND

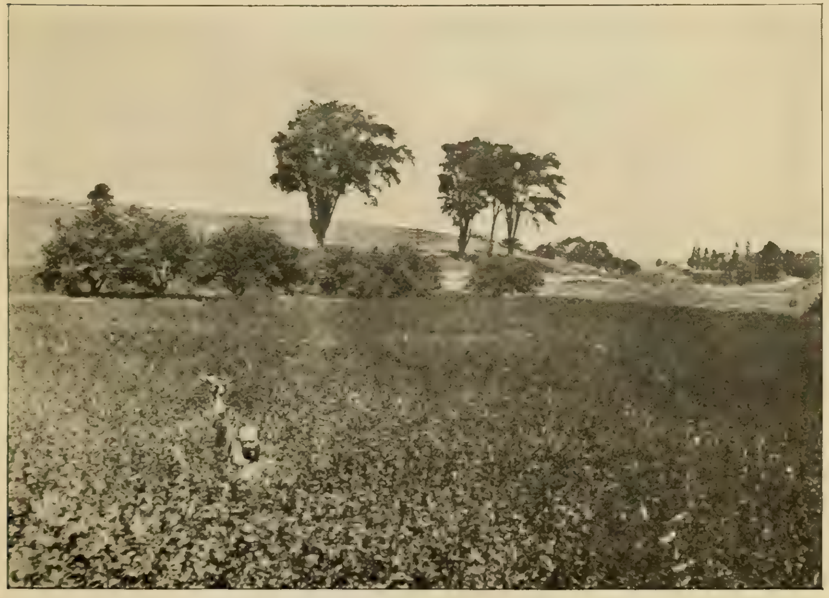


FIG. 85.— FARM LAND NEAR ADAMS CENTER — SWEET CLOVER IN FOREGROUND

ANTWERP: The surface is broken in the north and east by rocky ridges parallel to the St. Lawrence. The southeastern part is more level. The soil in the valleys is a clayey loam and is very fertile. This is a rich dairy town.

Products: Hay, oats, corn and potatoes.

Average values of farm land range from $30 to $60 an acre.

BROWNVILLE: The surface is level and gently undulating. The soil is a clayey or sandy loam. Perch River enters the town at the northeast corner and flows into Black River. It is a dull, sluggish stream and much of the land along its course is flat and in many places marshy. Brownville, on Black River, has an excellent water power and is the seat of a large paper manufacturing industry.

Products: Hay, grain and corn.

Average values of farm land range from $50 to $60 an acre.

CAPE VINCENT: The surface is level or slightly undulating. The soil is a clayey loam. Threemile and Mud creeks are the principal streams. There are a number of sulphur springs in the town.

Products: Hay, oats, corn and potatoes.

Average values of farm land range from $45 to $60 an acre.

CHAMPION: The surface is broken and hilly. The most elevated portions are the slate hills in the southern part, known as "The Peak." From the summits of these hills, which are about 1,300 feet above tide, the land descends in broken and irregular terraces to the Black River on the north. The northern part is more level. The town is watered by numerous small streams, the principal ones being Townsend and Deer Lick creeks. The soil is generally a clayey loam, but near the river in some places it is sandy.

Products: Hay, corn, potatoes, maple products and oats.

Average values of farm land range from $20 to $75 an acre.

CLAYTON: The surface is level or slightly rolling. This town includes Grindstone and several small islands in the St. Lawrence. Water lime has been manufactured in considerable quantities. Clayton, situated at the mouth of French Creek, is largely engaged in the lumber trade and ship building.

Products: Hay, oats, corn, potatoes, barley and wheat.

Average values of farm land range from $45 to $60 an acre.

ELLISBURG: The surface is rolling and inclined toward the lake. A range of low sand hills extends along the shore and these are succeeded by a wide marshy region, producing wild grasses that in dry seasons may be mown. North and South Sandy creeks are the principal streams. The soil is sandy on the west, clayey through the center, and a slaty loam in the east. This is one of the wealthiest agricultural towns in the county and is surpassed by few in the state.

Products: Corn, oats, barley, hay and seed beans.

Average values of farm land range from $35 to $75 an acre.

HENDERSON: The surface is rolling. The town is deeply indented by Henderson Bay. There are in the town two small lakes and several marshes. Stony and Little Stony creeks are the principal streams. The soil is clay and loam.

Products: Corn, oats, dairy products and wool.

Average values of farm land range from $30 to $75 an acre.

HOUNSFIELD: The surface is very level. This town includes the islands in the lake opposite. The soil is a clayey and sandy loam. Ship building and manufacturing have received considerable attention.

Products: Hay, oats, barley, peas, beans and dairy products.

Average values of farm land range from $50 to $100 an acre.

LE RAY: The surface is level or gently rolling. The soil is principally a clayey loam. A strip of barren sand, once covered with pine, but now almost a desert, extends along Black River. The principal streams are Black and Indian rivers.

Products: Hay, oats, barley, corn, wheat, potatoes and alfalfa.

Average values of farm land range from $10 to $100 an acre.

LORRAINE: This town is elevated and uneven and traversed by deep gorges. In the northwestern corner of the town the land is nearly level, and in this part and along the south branch of Sandy Creek are several productive farms. In the southern part of the town are some large brooks whose waterpower have been improved. The soil is clay and loam underlaid with shales. It is generally fertile, but is better adapted to grazing than to the culture of cereals.

Products: Dairy products, hay, grain, ensilage, corn, potatoes and maple products.

Average values of farm land range from $20 to $75 an acre.

LYME: The surface is very level. The western border is deeply indented by Chaumont Bay and its branches. The soil is principally clay. Near Chaumont are extensive and valuable limestone quarries.

Products: Hay, corn, oats, dairy products, wheat and potatoes.

Average values of farm land range from $40 to $100 an acre.

ORLEANS: The surface is level or slightly rolling. The principal streams are Chaumont River and Hyde Creek. The soil is clay and loam.

Products: Hay, oats, barley, ensilage, corn, potatoes.

Average values of farm land range from $20 to $100 an acre.

PAMELIA: The surface is level or gently undulating. The town is drained by Perch River and several small streams. The soil is clay and sand. It is underlaid with limestone, which frequently crops out at the surface.

Products: Hay, oats, ensilage corn, potatoes and beets.

Average values of farm land range from $40 to $80 an acre.

PHILADELPHIA: The surface is level in the east but rocky and broken in the west. Indian River and Black Creek are the principal streams. The soil is generally a clayey loam.

Products: Hay, oats, corn and potatoes.

Average values of farm land range from $45 to $100 an acre.

RODMAN: The surface is hilly and broken by the deep ravines of Sandy Creek and its branches, which afford excellent drainage. The soil is generally fertile gravelly loam. Numerous springs abound, which, together with the favorable condition of the soil, make this an excellent grazing region.

Products: Hay, dairy products, ensilage corn, potatoes, grain and maple products.

Average values of farm land range from $20 to $75 an acre.

RUTLAND: The surface consists of a narrow river valley on the north, a terraced plateau in the center, and a hilly region in the south. The central plateau, embracing the greater part of the town, is 300 to 400 feet above the flat country further north, but descends by a series of steep inclines to the level of the river.

Products: Hay, potatoes, grain, maple products and corn.

Average values of farm land range from $20 to $50 an acre.

THERESA: The surface along Indian River is broken and terraced by ridges of gneiss rock with fertile intervales. A part of the town, underlaid by sandstone, is level or undulating. The town contains a number of beautiful lakes, lying principally in the northern part.

Products: Hay, corn, oats and potatoes.

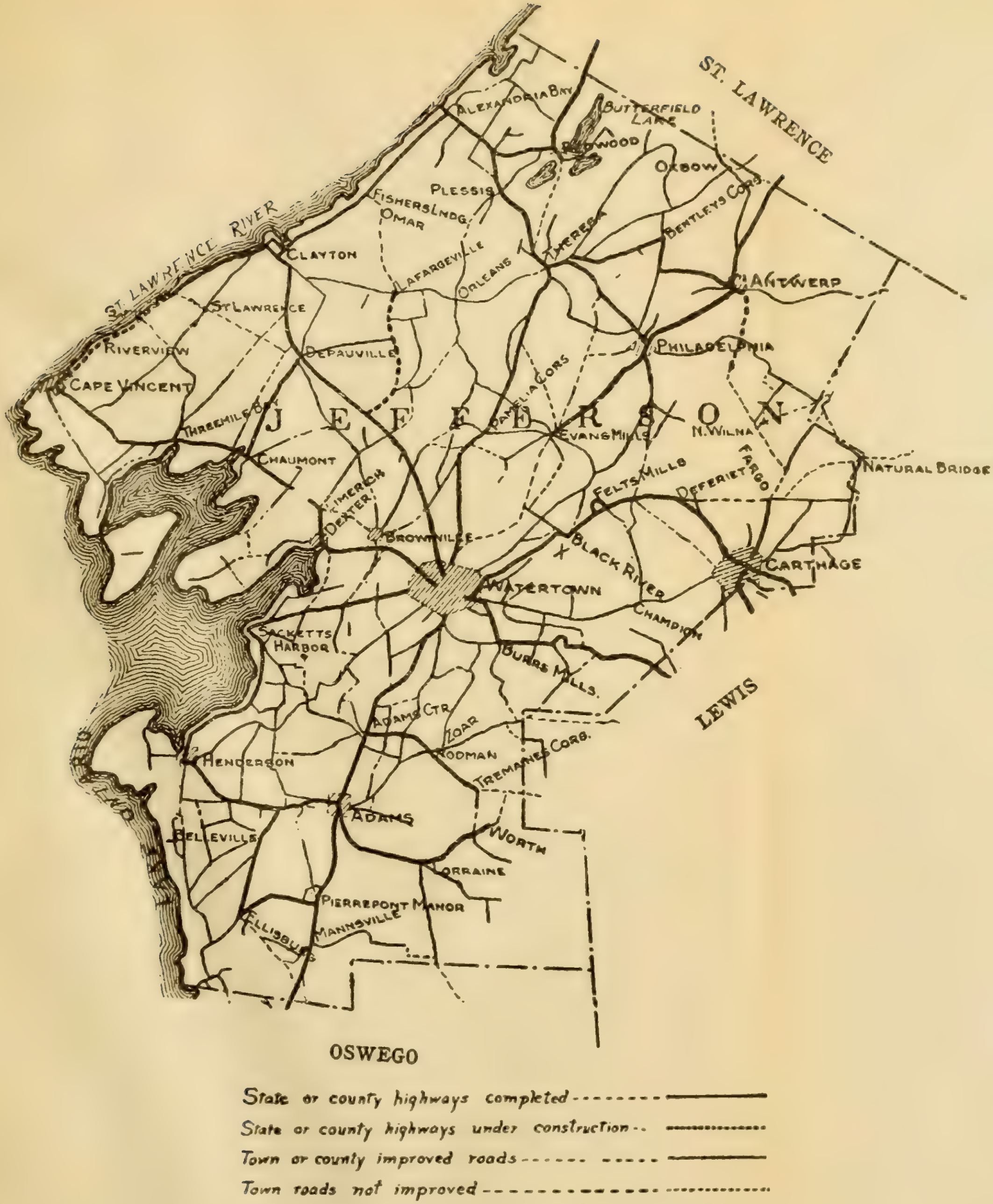
Average values of farm land range from $40 to $60 an acre.

WATERTOWN: The surface is moderately broken in the center and west, rising into hills about 1,000 feet high in the southern and eastern portions. Black River affords abundant waterpower, which is now being generally utilized. Besides this river the principal stream is a branch of Sandy Creek. A narrow marsh known as "Long Swamp" extends across the northwestern part of the town. The soil in the west is a dark loam interspersed with gravel ridges, while in the eastern portion gravel becomes largely predominant. Small boulders are abundant. It is well adapted to grazing and the spring crops and fruit are readily cultivated.

Products: Corn, hay, oats and potatoes.

Average values of farm land range from $50 to $100 an acre.

WILNA: The surface is somewhat broken. It is chiefly underlaid by the primary rock, which rises into low, naked ridges and by calciferous sandstone. On the Black River along the western boundary is a series of rapids forming an abundance of waterpower. Indian River also furnishes waterpower at several places. Black Creek and its tributaries extend through the town. The soil is a light sandy loam, moderately fertile.


ST. LAWRENCE
ST. LAWRENCE RIVER
ALEXANDRIA BAY
BUTTERFIELD LAKE
REDWOOD
OXBOW
PLESSIS
FISHERS LNDG.
OMAR
BENTLEYS CORS.
THERESA
CLAYTON
LAFARGEVILLE
ORLEANS
ANTWERP
ST. LAWRENCE
RIVERVIEW
DEPAUVILLE
PHILADELPHIA
CAPE VINCENT
CAMELIA CORS.
THREEMILE BAY
JEFFERSON
N. WILNA
EVANS MILLS
CHAUMONT
FARGO
NATURAL BRIDGE
FELTS MILLS
DEFERIET
LIMERICK
DEXTER
BROWNVILLE
BLACK RIVER
CARTHAGE
WATERTOWN
SACKETTS HARBOR
CHAMPION
BURRS MILLS.
LEWIS
ADAMS CTR.
ZOAR
RODMAN
TREMAINES CORS.
HENDERSON
ADAMS
BELLEVILLE
WORTH
LORRAINE
PIERREPONT MANOR
MANNSVILLE
ELLISBURG
LAKE ONTARIO
OSWEGO
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Products: Corn, oats, potatoes, hay and buckwheat.

Average values of farm land range from $10 to $45 an acre.

WORTH: The surface is undulating and has an elevation of 1,600 feet in the eastern part, the highest portion of the county. The town is well drained and the soil, underlaid by shale rock, is well adapted to grazing. Dairying is the principal industry.

Products: Hay, dairy products, potatoes, buckwheat, oats and maple products.

Average values of farm land range from $10 to $60 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Jefferson County has excellent railroad connections over lines of the New York Central Railroad. Watertown is a center for lines to Syracuse, Utica, New York, Ogdensburg, and Canadian and eastern points, as well as various points within the county — Sacket Harbor on Lake Ontario and Cape Vincent and Clayton on the St. Lawrence. Philadelphia and Carthage are also important railroad centers.

The Black River electric line extends from Watertown to Black River Bay. Carthage is the terminus of the Black River Canal, which connects Black River with the Erie Canal at Rome.

Improved Highways

State roads extend in all directions from Watertown; among these are roads leading direct to Syracuse, Utica, and Clayton. There are in the county 252 miles of improved highways, with 32 miles additional under construction.

AVAILABLE MARKETS

Watertown and Carthage form the principal local markets. The city of Watertown has many advantages as a manufacturing city. The Black River at this point furnishes a permanent and inexhaustible waterpower unsurpassed by any in the state and by few in the United States. Its shipping facilities are also excellent. Among the articles of manufacture are wood pulp and paper, machinery, furniture, and flour. Carthage has large pulp and paper manufacturing interests.

In Jefferson County are more than 100 milk establishments collecting milk from over 55,000 cows. About 239,000,000 pounds of milk is delivered at the plants, a considerable amount of which is shipped as market milk and cream. The county ranks second in the state in the manufacture of cheese, making 13,000,000 pounds, over 9,000,000 pounds of which is American cheese. Other manufactured products include a half million pounds of creamery butter, 10,000,000 pounds of condensed milk, and a large amount of powdered whole and skim milk. The county ranks first in the manufacture of fancy cheeses and second in the manufacture of Limburger.

There are two canning factories in the county.

The agricultural organizations are as follows:

Cape Vincent Agricultural Society.
Cooperative Farms Association.
Granges: Pomona and thirty-three subordinate granges.
Jefferson County Agricultural Society.
Jefferson County Beekeepers' Association.
Jefferson County Dairymen's League.
Jefferson County Farm Bureau Association.
Jefferson County Holstein-Friesian Breeders' Association.
Jefferson County Sheep Growers' Association, Inc.
Mannsville Dairy Corporation.
North Country National Farm Loan Association.
Patrons of Industry: Three associations.

EDUCATIONAL FACILITIES

An approved course in agriculture is given at Belleville.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Adams, Adams Center, Alexandria Bay, Antwerp, Belleville, Black River, Brownville, Cape Vincent, Carthage, Chaumont, Clayton, Dexter, Evans Mills, Felts Mills, Henderson, La Fargeville, Mannsville, Philadelphia, Redwood, Sacket Harbor, Smithville Flats, Theresa, Three Mile Bay, Watertown, and Carthage.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	732,861 acres
Number of farms	5,778
Per cent of farm land improved	68.4

LIVE STOCK PRODUCTS

Milk sold	28,771,236 gal.
Cream sold	7,801 gal.
Butter fat sold	949,974 lbs.
Butter produced	604,473 lbs.
Cheese produced	3,654 lbs.
Eggs produced	1,525,735 doz.
Wool produced	6,120 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	17,746
Cattle	107,394
Sheep	12,059
Swine	19,818
Poultry	230,378

BEES

Number of colonies	4,574

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	7,365	240,800 bu.
Oats	82,864	2,050,568 bu.
Wheat	398	5,997 bu.
Barley	3,575	80,141 bu.
Buckwheat	1,695	32,950 bu.
Rye	239	2,461 bu.
Hay and forage	227,856	341,544 tons
Special Crops:		
Potatoes	5,319	789,027 bu.
Vegetables, other than potatoes	1,952	....
Dry edible beans	947	15,632 bu.
Dry peas	835	13,242 bu.
Fruits:		
Apples	79,896 trees	82,413 bu.
Peaches and nectarines	331 trees	105 bu.
Pears	2,896 trees	1,643 bu.
Plums and prunes	2,856 trees	857 bu.
Cherries	4,631 trees	1,571 bu.
Quinces	5 trees	2 bu.
Grapes	2,337 vines	22,539 lbs.
Small fruits	122 acres	157,000 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	5, 507	5, 549

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	17, 192	16, 816
Cattle	104, 318	98, 237
Sheep	4, 553	2, 851
Swine	16, 367	13, 643
Poultry	232, 728	206, 390

BEES

	1917	1918
Number of colonies	3, 154	4, 179

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	4,445	3,813	66,793 bu.
Oats	79,137	72,980	2,495,955 bu.
Barley	3,980	2,470	49,059 bu.
Buckwheat	2,902	2,770	29,553 bu.
Wheat (winter)	336	329	3,468 bu.
Wheat (spring)	1,353	3,348	44,452 bu.
Rye	317	342	3,420 bu.
Hay and Forage:			
Alfalfa	1, 919	2, 319	4, 167 tons
Other hay	204, 223	198, 271	257, 514 tons
Corn (ensilage)	24, 129	21, 725	139, 759 tons
Corn (fodder)	....	4, 914	....
Special Crops:			
Field beans	1,987	2, 755	23, 738 bu.
Cabbage	274	238	2, 061 tons
Potatoes	4, 061	5, 089	347, 824 bu.
Roots raised for stock food	....	249	....
Canning factory crops	74	459	....
Other vegetables and garden crops	1,301	1, 183	....
Fruits:			
Apples	1, 512	2, 250	28, 091 bu.
Peaches	....	6	10 bu.
Pears	....	8	249 bu.
Plums	....	15	3, 600 lbs.
Cherries	....	13	3,408 lbs.
Vineyard	....	1	1, 331 lbs.
Small fruits	179	229	....

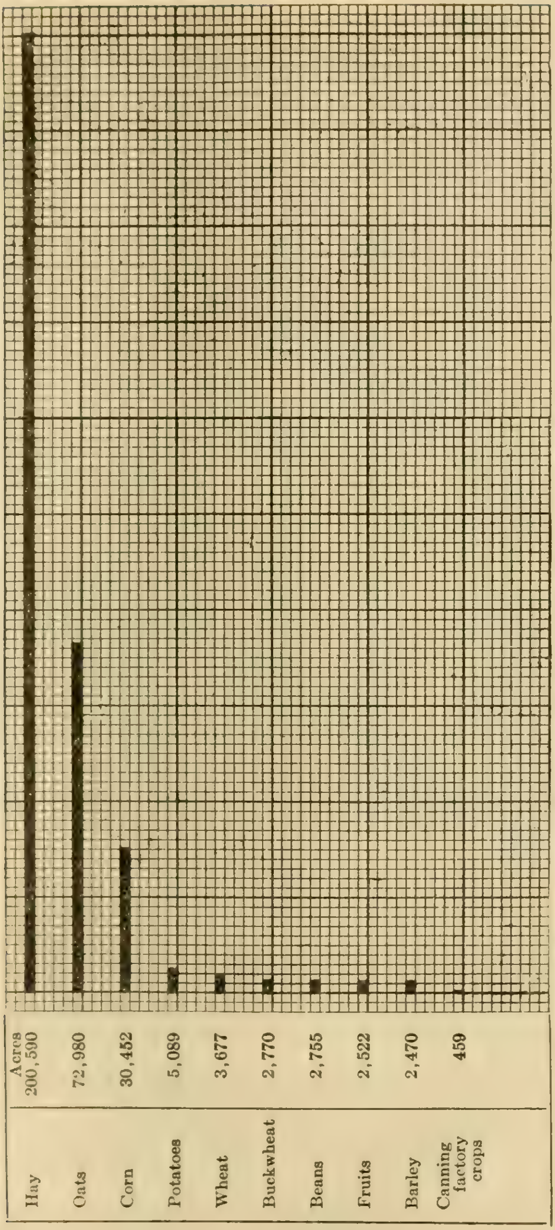


FIG. 86.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN JEFFERSON COUNTY

KINGS COUNTY

This county occupies the extreme western end of Long Island and includes several islands along the coast, among which is Coney Island. It was one of the original counties formed in 1683 and was named in honor of Charles II.

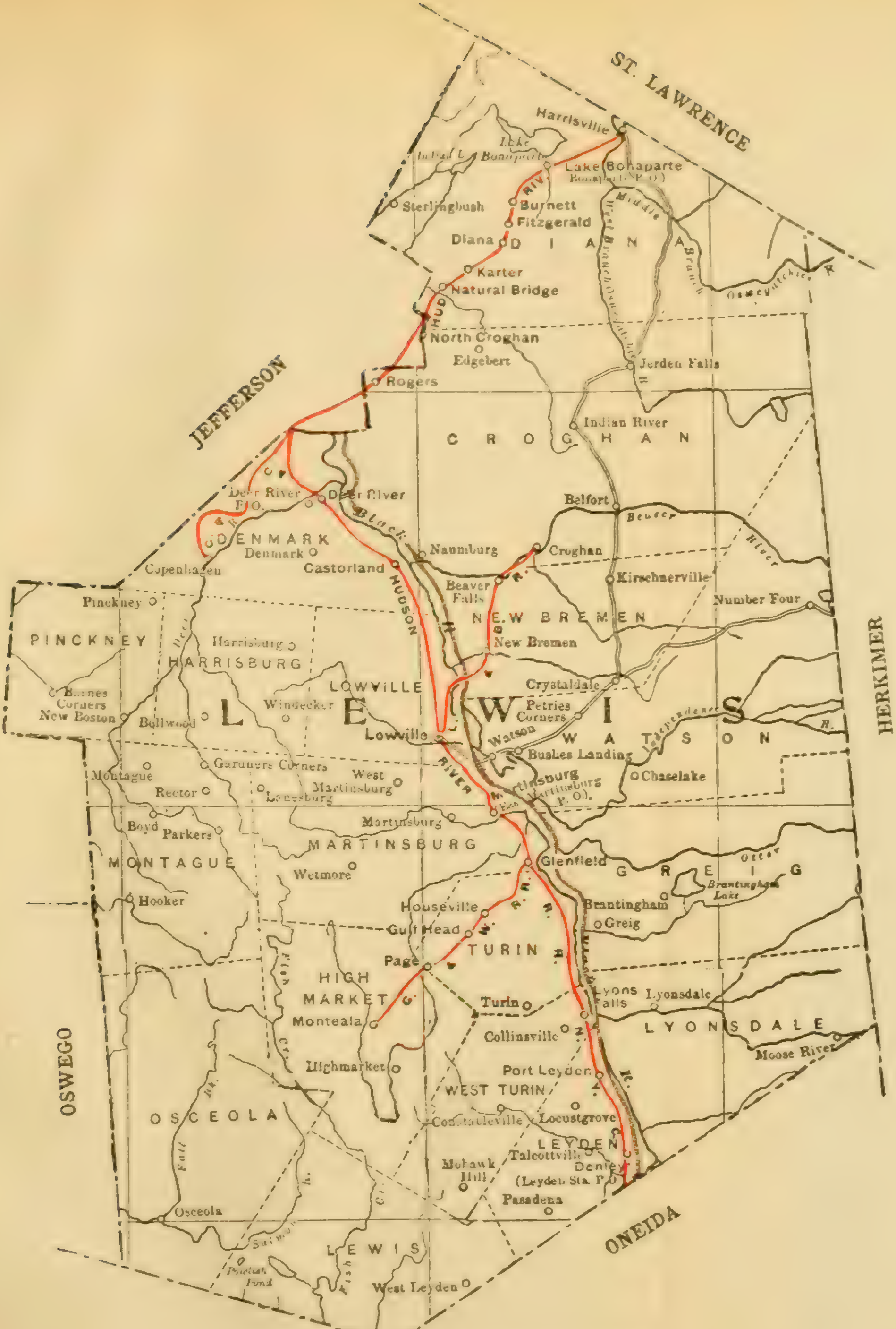
When the city of Greater New York was established, Kings County was united with it as the Borough of Brooklyn.

The first settlements were made under the Dutch Government in 1625 by several families of French Protestants or Walloons who located near Wallabout Bay. Little progress was made for many years. In 1836 other settlements were made, at about which time the English, after taking the oath of allegiance to the Dutch Government, settled on the east end of the island.

Previous to the Revolution the farmers of Kings County raised tobacco, part of which they sent to Europe. They also raised cotton to a limited extent, solely for the uses of their own households.

Kings County was the scene of the battle of Long Island and was occupied by the British army during the remainder of the Revolutionary War. During the War of 1812 a considerable amount of labor was expended in erecting fortifications, and bodies of troops were stationed there to protect the people.

The United States Navy Yard is located within this county on Wallabout Bay.


ST. LAWRENCE
Harrisville
Lake Bonaparte
Lake Bonaparte
(Bonaparte P. O.)
Sterlingbush
Burnett
Fitzgerald
Diana
D I A N A
Karter
Natural Bridge
Oswegatchie R.
Middle Branch
West Branch
North Croghan
Edgebert
Jerden Falls
Rogers
JEFFERSON
Indian River
C R O G H A N
Deer River P. O.
Deer River
Black
Belfort
Beaver River
D E N M A R K
Denmark
Copenhagen
Castorland
Naumburg
Croghan
Beaver Falls
Kirschnerville
Number Four
Pinckney
P I N C K N E Y
Harrisburg
H A R R I S B U R G
N E W B R E M E N
New Bremen
HUDSON
Deer
HERKIMER
L O W V I L L E
Crystaldale
Barnes Corners
New Boston
Bellwood
Windecker
L E W I S
Petries Corners
Independence R.
Lowville
Watson
W A T S O N
Bushes Landing
Gardners Corners
West Martinsburg
Chaselake
Montague
Rector
Lanesburg
Martinsburg
Martinsburg (Martinsburg P. O.)
RIVER
Boyd
Parkers
Martinsburg
M A R T I N S B U R G
Glenfield
G R E I G
Otter
Brantingham Lake
M O N T A G U E
Wetmore
Hooker
Houseville
Brantingham
Greig
Gulf Head
T U R I N
Page
HIGH MARKET
Lyons Falls
Lyonsdale
Turin
Monteala
Collinsville
L Y O N S D A L E
Moose River
Highmarket
Port Leyden
OSWEGO
WEST TURIN
O S C E O L A
Constableville
Locustgrove
L E Y D E N
Talcottville
Mohawk Hill
Denley (Leyden Sta. P. O.)
Pasadena
Osceola
Salmon R.
Fall Br.
Fish Cr.
Mohawk
L E W I S
Fourfish Pond
West Leyden
ONEIDA

MAP OF LEWIS COUNTY, SHOWING TOWNSHIPS

Red, railroads; brown, canals

LEWIS COUNTY

This county lies mostly in the valley of Black River, north of the center of the state, and separated from Lake Ontario by Jefferson and Oswego counties. It covers an area of 812,800 acres, extending from north to south 45 miles, and from east to west 32 miles.

The population of the various townships is shown in the following table:

Population by Townships

(Census of 1915)

Croghan	2,972	Montague	489
Denmark	2,116	New Bremen	1,660
Diana	2,439	Osceola	467
Greig	758	Pinckney	804
Harrisburgh	677	Turin	1,108
High Market	390	Watson	771
Lewis	733	West Turin	2,011
Leyden	1,663		
Lowville*	4,104	Total	25,947
Lyonsdale	1,024		
Martinsburg	1,761		

---

* Lowville, in the town of Lowville, is the county seat.

HISTORICAL ASSOCIATIONS

Lewis was formed from Oneida in 1805 and named in honor of Governor Morgan Lewis. It lies entirely within the Macomb purchase, and a small part of the John Brown tract is included in the eastern part of the county.

Many of the stockholders who outlined the first schemes of settlement in this county were persons of wealth, anxious to find a safe asylum from the French revolution then raging, and some of them attempted to establish homes. The class engaged in this enterprise, however, were not the kind to succeed in a forest settlement, and, after two or three years, their beginnings at High Falls, Beaver River, and Carthage were broken up.

The first settlers in the county who came to remain arrived in 1794 from New England and located in Leyden. The fame of the Black River country spread through Massachusetts and Connecticut, and within the next ten years the country between Tug Hill on the west and the river on the east, including much of the best land in the county, was taken up by a laborious, intelligent, and enterprising population. With the exception of an attempt made by Brown to settle his tract, little improvement was made east of the river until about 1820. The power plants that furnish the northern part of Lewis County and much of Jefferson County with power and electric lighting are located above Belfort on Beaver River, in the town of Croghan.

DEVELOPMENT OF INDUSTRY

At about the middle of the nineteenth century several large tanneries and lumbering establishments were built. The tannery business has since entirely passed; lumbering is confined to hard woods and the cutting of spruce, poplar, and other soft woods suitable for paper making. At about 1862 the growing of hops was commenced and its cultivation was steadily increased until the industry reached a large magnitude. There has been a steady decrease since 1900, and at present the industry is of very little importance.

The dairying industry was successfully established in the central portion of the county more than 100 years ago, when the butter and cheese was drawn to Albany to market, and, after the Erie Canal was built, to Rome. Today dairying is the prominent and chief agricultural pursuit throughout the county. All milk that is within a reasonable distance of the railroad is delivered to milk establishments and shipped to the New York market. Taking this fact into consideration, it is not surprising that fewer hogs are raised now than in former years. Cheese making is extensively followed in the territory not adjacent to the milk-shipping stations.

Nearly the whole of Lewis County is particularly adapted to manufacturing maple sirup and sugar.

CLIMATE AND RAINFALL

Climatological records for Lewis County, on account of the differences in elevation in different parts of the county, have been taken from two stations. The first station is Lowville, in the

Black River valley of central Lewis County, which is elevated 900 feet above sea level. The present observer at this station is Raymond R. Jansen.

Average dates for the last killing frost in spring and the first in fall are May 18 and September 24, respectively, giving a growing season of 129 days.

The following table, which covers all available records to the end of 1916, a period of 50 years, shows both normal and extreme temperatures and precipitation.

RECORD OF TEMPERATURE AND PRECIPITATION AT LOWVILLE

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	18.8	60	1906	—37	1914	2.70	1.81	1915	24.0
February.....	18.9	57	1906	—32	1908	2.68	1.53	1908	23.9
March.........	28.8	72	1905	—22	1897	2.37	2.40	1900	12.8
April..........	42.6	86	1915	4	1898	2.33	1.22	1914	3.7
May..........	54.3	92	1911	20	1903	3.10	3.02	1916	T.
June..........	62.9	95	1913	31	1906	3.44	3.25	1903	......
July...........	67.7	97	1911	35	1898	3.54	2.78	1902*	......
August.......	64.9	94	1899*	32	1909	3.18	4.38	1893	......
September....	57.9	92	1900	24	1904	2.86	1.82	1913	T.
October.....	46.7	84	1900	13	1903	3.40	2.00	1903	1.1
November....	34.8	72	1909	—5	1911	3.36	2.05	1900	11.7
December.....	22.9	60	1914*	—31	1914	3.05	2.80	1901	23.4
Year..........	43.4	97	1911	—37	1914	36.01	4.38	1893	100.6

* Also earlier years.

The second station is located at Number Four in the extreme eastern part of the county, at an elevation of 1,571 feet. At this point the average dates for the last killing frost in spring and the first in fall are May 19 and September 18, respectively, giving a growing season of 122 days.

The following table shows both normal and extreme temperatures and precipitation during the period from 1889 to 1905:

Record of Temperature and Precipitation at Number Four

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	16.9	54	1890	—31	1896	4.66	1.75	1899	30.2
February	16.6	53	1902	—31	1900*	3.93	1.25	1900	29.9
March	26.5	60	1902*	—17	1900	3.82	2.60	1900	24.3
April	39.4	82	1899	—2	1898	2.70	1.47	1902	9.0
May	52.5	87	1895	20	1900	3.88	2.50	1890	0.4
June	60.9	89	1901	29	1897	4.33	2.73	1889	......
July	64.3	91	1901	34	1890	5.56	2.88	1896	......
August	61.9	91	1899	33	1895	4.80	2.84	1897	......
September	55.9	88	1892	25	1896	4.67	2.63	1893	0.2
October	44.6	80	1900	14	1902	4.09	2.23	1903	1.9
November	31.4	67	1902	—10	1901	4.71	3.13	1900	14.3
December	20.9	58	1901	—28	1902	4.74	2.15	1898	31.2
Year	41.0	91	1891*	—31	1900*	51.89	3.13	1900	141.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface consists of broad intervales extending along the west side of Black River and the uplands rising in the east and west.

The eastern half rises gradually to an elevation of about 1,400 feet above tide and forms a portion of the great wilderness of northern New York. In many places, the surface is broken up by low ridges or isolated masses of gneiss. The streams in the eastern part flow generally over sandy beds, and those in the west over rocky or gravelly beds and often through wild ravines. The soil in the eastern part is a light yellow sandy loam, unprofitable for cultivation. In the eastern part are several picturesque and celebrated lakes that have been popular summer resorts. The streams flowing from the lakes are generally rapid, and several of them furnish valuable waterpower. Iron ore and lead have been worked to some extent and many interesting minerals are found. Gold deposits in the sand have been claimed and exploited to the regret of many innocent purchasers of that stock.

The western portion rises from the valley of Black River by a series of terraces toward the center of the western part of the county, whence it spreads out into a level, swampy tableland to Lake Ontario. These terraces are occasionally broken by oblique valleys from the northwest. The summit is 1,500 to 1,700 feet above tide. In the limestone region, the soil is somewhat thin, but everywhere productive. Near the foot of Tug Hill, in the western part, is a strip of heavier soil of considerable area and marked by a line of springs and swamps. The soil on the slate region in the western part is deep and well adapted to grazing. On the summit of the slate tableland are splendid forests of spruce and birch, with extensive swamps that give rise to streams flowing into Black and Mohawk rivers, Oneida Lake, and Lake Ontario.

Spring grains are readily cultivated. This county is, however, particularly well adapted to pasturage, and dairying forms the principal pursuit of the people.

DESCRIPTION BY TOWNSHIPS

Croghan: The surface has an inclination toward the west and north; in the central and eastern parts it is broken and hilly, with numerous small streams and creeks. The town contains the sources of Indian River and is crossed by Beaver River and the Oswegatchie with its branches. Black River forms the western boundary. In the eastern part of the town are several lakes, notably Long, Trout, and Twin ponds on the Oswegatchie River, which have been famous as deer hunting and trout fishing resorts. The soil is mostly light and sandy and along the river intervales it is moderately fertile.

At Croghan the large tanneries of years ago are replaced with extensive plants for manufacturing hardwood flooring and shoe lasts. From the maple forests there is produced a fine grade of maple sugar and sirup. Above Belfort on Beaver River are several large and valuable waterpower sites, three of which have been developed; at Beaver Falls there is located the pulp and paper mills of the J. P. Lewis and the Slocum and Lefevre companies. The Northern New York Utilities, Inc., control two developed waterpower sites and over their lines light and power are transmitted to Lowville, Watertown, and vicinity. One of the largest and best developed powers is the Beaver River Power Company, which at present supplies nearly the entire electrical energy at the paper mills in Beaver Falls.

Products: Grain, hay, corn, potatoes and maple sirup.

Average values of farm land range from $5 to $60 an acre.

DENMARK: The surface descends to Black River on the east by a succession of irregular terraces. Deer River flows through the town; on its course are several falls, affording an abundant water-power in spring and fall, but somewhat scanty during the summer months. The High Falls, near Copenhagen, which have a descent of 160 feet, are noted for their beauty. At these falls is located an electric lighting and power plant, which furnishes light for Copenhagen and power to the paper mills at Carthage. The eastern part of the town is covered with deep deposits of drift. Near the mouth of Deer River are extensive flats. Black River was formerly bordered by a cedar swamp. The soil is very fertile.

Products: Hay, grain, corn and potatoes.

Average values of farm land range from $20 to $60 an acre.

DIANA: The surface is gently rolling and quite rocky. In the eastern part are hills reaching a height of 1,000 to 1,200 feet. The principal streams are the Oswegatchie and Indian rivers and their branches. There are a number of lakes in the northern and eastern parts of the town, prominent among which is Lake Bonaparte, formerly the home of Count Joseph Bonaparte, the favorite brother of the famous Napoleon. Iron ore is found in those sections. Lumbering was formerly the principal industry. At Harrisville is located the Diana Paper mill, the entire production of which is used in printing the catalogue of Sears, Roebuck & Co., at Chicago. Near Natural Bridge in this town is located the Natural Bridge Lime Co. and the Carbola Chemical Co., the latter operating a large talc mine, yielding a product of an excellent grade.

Products: Hay, grain, corn, potatoes and maple sirup.

Average values of farm lands range from $1 to $50 an acre.

GREIG: The surface is rolling in the west, but broken and rocky, and in some places hilly, in the east. The principal

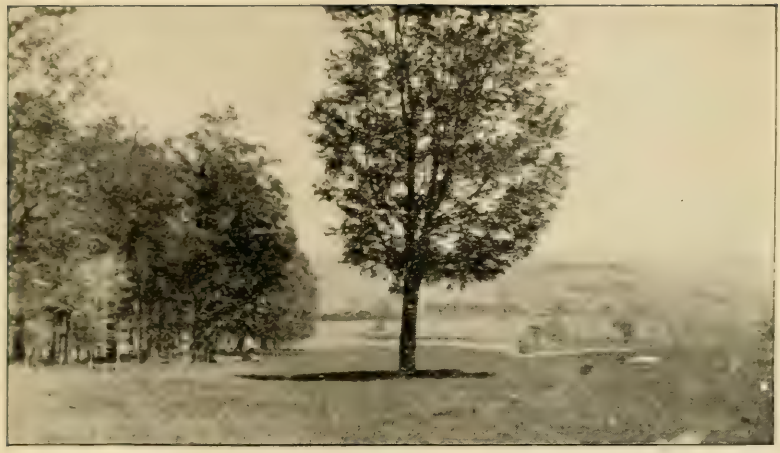


FIG. 87.— VIEW OVER THE BLACK RIVER, LEWIS COUNTY, SHOWING THE ROLLING CONTOUR OF SURFACE. A SUGAR BUSH IS SHOWN AT THE LEFT

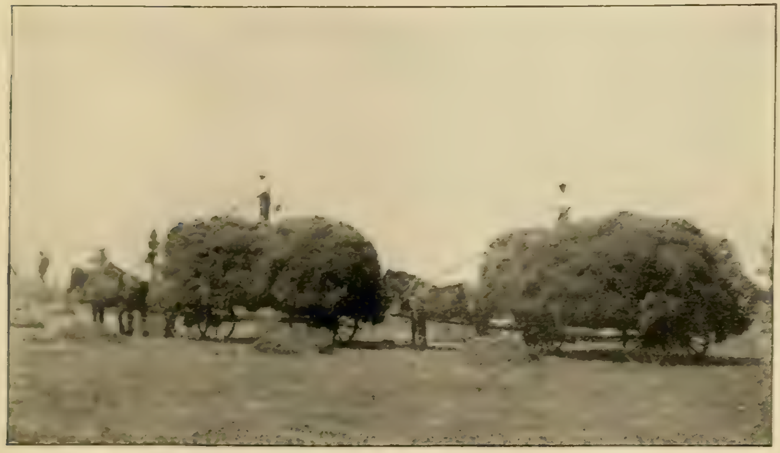


FIG. 88.— SECOND CUTTING OF ALFALFA ON FARM OF N. W. SALMON, GLENFIELD, LEWIS COUNTY

streams are Otter and Fish creeks, tributaries of Black River. In the eastern part are several small lakes, the largest of which is Brantingham Lake, a favorite summer resort and an excellent place for hunting and fishing. The soil is principally a light, sandy loam, too sandy for raising large crops. The land that is adjacent to the river can be made very productive, but when located a few miles back is very unproductive. The only hops grown in the county at present are grown at Greig.

Products: Oats, corn, barley, buckwheat and potatoes.

Average values of farm land range from $1 to $70, possibly $100 for river bottom lands.

HARRISBURG: This town lies on the slate hills and limestone terraces northwest of the center of the county. Its general inclination is toward the northeast, the southwestern corner being 300 to 500 feet above Black River. Its surface is generally rolling, but in the southwest it is moderately hilly. The elevation varies from 1,200 to 1,700 feet above sea level. Deer River and tributaries are the principal streams. The soil is generally a rich loam, largely mixed with disintegrated limestone and slate. This is a very good potato and dairy section, but without the facilities of railroad transportation.

Products: Hay, oats, barley, corn and potatoes.

Average values of farm land range from $10 to $60.

HIGHMARKET: This town lies on an elevated slate region west of Black River. Its principal inclination is toward the southeast. The surface is rolling in the south and east, but broken and moderately hilly in the north and west, the general elevation being from 1,600 to 2,000 feet. Its streams are Fish Creek and branches. The soil is mixed with disintegrated slate and is best adapted to pasturage, dairying, and potatoes.

Products: Hay, oats, corn, potatoes and millet.

Average values of farm lands range from $10 to $50 an acre.

LEWIS: This township lies on the elevated plateau in the southern angle of the county, the highest points rising 1,700 feet above sea level. The surface is generally rolling, but broken and hilly in the west. The principal streams are Fish Creek and the creeks forming the headwaters of the Mohawk and Salmon rivers. The soil is generally a sandy loam, combined with disintegrated slate, moderately fertile, and, in the southeastern part, well adapted to dairying and potato growing. Much of the town is in forest.

Products: Hay, corn, potatoes, oats, millet and buckwheat.

Average value of farm land, $20 an acre.

LEYDEN: The surface is undulating with an inclination toward the east, the western border lying about 900 feet above Black River. The principal streams are Sugar River and Moose Creek. The soil is a fertile loam mixed with disintegrated slate and limestone and in production ranks with the best farming lands of the county.

Products: Hay, oats, corn and potatoes.

Average value of farm land, $50 an acre.

LOWVILLE: The surface is generally rolling. A wide intervale, which was formerly marshy, extends along Black River. The soil is a deep, fertile loam intermixed with disintegrated limestone and very productive. Several mineral springs are found in the town. The village has several manufacturing industries, including the Adirondack Maple Co. The Lowville Cheese Cold Storage plant located here is probably the largest of its kind in the world.

Products: Hay, corn, grain and potatoes.

Average values of farm land range from $20 to $100 an acre.

LYONSDALE: The surface is rolling in the west and broken in the east. The scenery along the Moose River is noted for its wildness and beauty. On this stream, which has excellent water-power, are located several large pulp and paper mills. A large portion of the township is in the second crop of timber. The soil is principally light and sandy, with little loam.

Products: Oats, corn, barley, buckwheat, rye and potatoes.

Average values of farm land range from $1 to $30 an acre.

MARTINSBURG: The surface is rolling, with a wide, level, fertile intervale bordering on Black River. It has an easterly inclination, the western border being nearly 1,200 feet above the river valley. The principal streams are Whetstone and Roaring brooks, both of which present beautiful scenery. The soil is a deep, fertile loam. The eastern part is very productive and the western part is in the process of being cleared.

Products: Hay, corn, potatoes and grain.

Average values of farm land range from $5 to $100 an acre.

MONTAGUE: This is one of the back hill towns, with a surface generally rolling, but in some places broken and hilly. It has an inclination toward the northwest, and its elevation is 1,700 to 1,900 feet above tide. It is watered by numerous small streams flowing into Deer River. The soil is a moderately fertile sandy and gravelly loam. Potatoes are largely raised; it has excellent pasture lands for dairying, but the transportation facilities are poor.

Products: Hay, potatoes and oats.

Average values of farm land range from $2 to $30 an acre.

NEW BREMEN: The surface is level in the west, but rolling, broken, and rocky in the east. It is watered by several tributaries of the Black River and numerous smaller streams, with which the town is well supplied. The soil of the larger portion of the town is light and sandy, but where a good portion of loam is mixed with the soil it is very fertile and productive.

Products: Oats, corn, rye, potatoes and maple sirup.

Average values of farm land range from $1 to $60 an acre, and for river bottom lands, $100.

OSCEOLA: This town lies in the high region in the southwestern corner of the county. Its surface is undulating with a general inclination toward the southwest. The highest point in the county is in the northern part of the town, being 1,800 to 1,900 feet above tide. Streams are branches of Salmon River and Fish Creek. Lumbering, which has been the principal occupation, is now confined to the northern section. Its soil is a moderately fertile sandy loam. This town has the disadvantage of poor transportation facilities.

Products: Hay, oats, corn, potatoes and millet.

Average value of farm land, $20 an acre.

PINCKNEY: This town lies on the highlands in the northwestern corner of the county, about 15 miles from Lowville and 10 miles from Watertown, and has an average elevation of 1,400 to 1,600 feet above tide. It forms the watershed between Deer River and Sandy Creek. A series of swamps extend along the eastern border. In the town are several mineral springs, one of which has acquired considerable local notoriety. The soil is a light, slaty loam on the hilly portion and a deep black loam in the valleys, especially adapted to potatoes. Transportation facilities being poor, small dairies are found in this section.

Products: Hay, potatoes, corn and oats.

Average values of farm land range from $5 to $35 an acre.

TURIN: The surface is quite level in the central and eastern part of the town; near the western border, it ascends to the slate hills, which are about 2,000 feet above the river; in the east it descends to the river intervale. The soil is generally a deep, fertile, productive loam mixed with disintegrated slate and limestone. Dairying is the principal industry, and a large plant of the Lewis County Condensed Milk Company is located in the village of Turin.

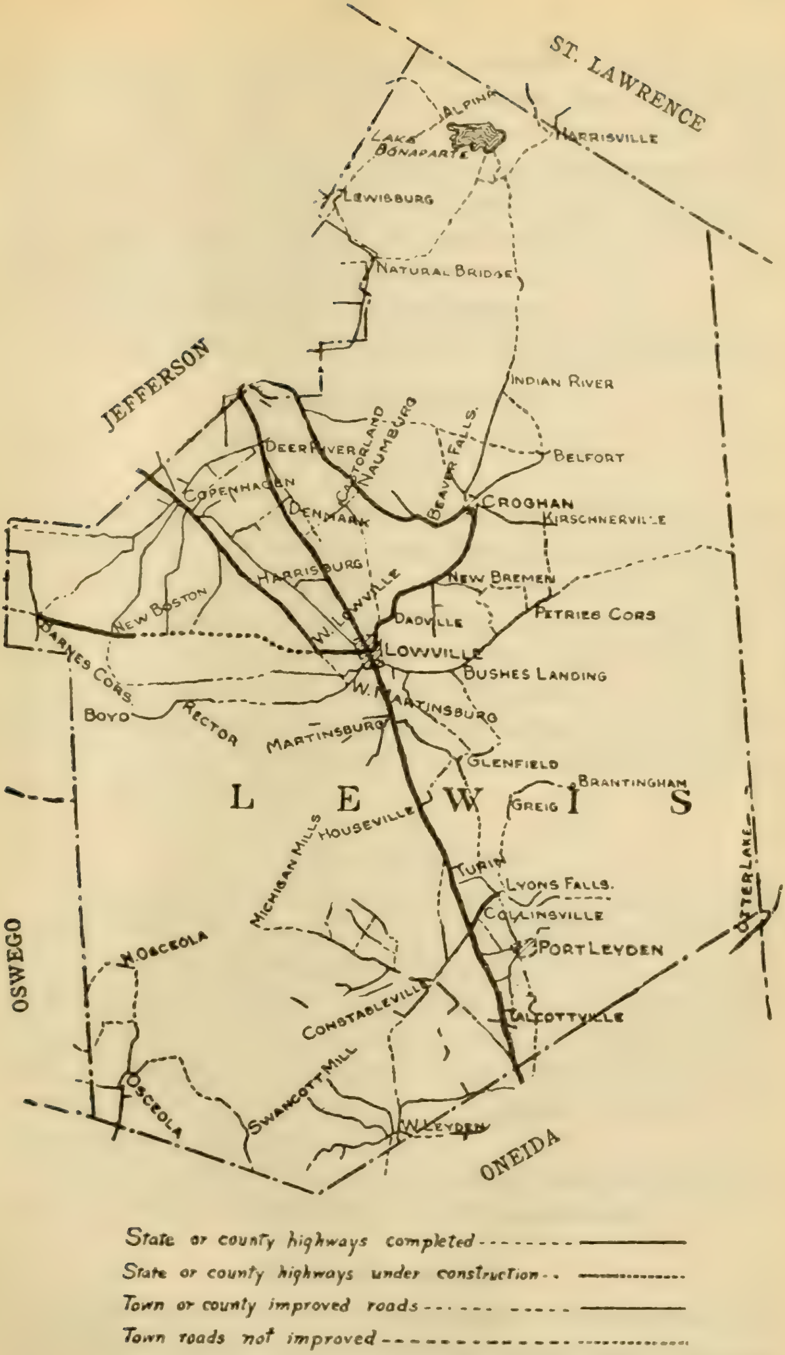
Products: Hay, oats, corn and potatoes.

Average values of farm land range from $10 to $80 an acre.

WATSON: The surface is level or gently rolling in the western part, and more hilly and broken in the central and eastern parts. It is watered by Beaver River on which is the beautiful Beaver Lake, and the celebrated hunting and fishing resort Number Four, which was settled in 1822. Independence Creek rises in the eastern part, into which runs the outlet of Chases Lake, and with several small branches empties into Black River. The central and eastern parts are largely forest-covered and a large tract on the extreme eastern border constitutes a portion of the famous John Brown tract. Several beautiful lakes not mentioned lie within the forest. The soil is light and sandy, especially in the western part.

Products: Corn, oats, buckwheat, rye and potatoes.

Average values of farm land range from $1 to $30 an acre;
a wide area of Black River bottom lands, $100 an acre.


ST. LAWRENCE
ALPINA
LAKE BONAPARTE
HARRISVILLE
LEWISBURG
NATURAL BRIDGE
JEFFERSON
INDIAN RIVER
DEER RIVER
CASTORLAND
NAUMBURG
BEAVER FALLS.
BELFORT
COPENHAGEN
DENMARK
CROGHAN
KIRSCHNERVILLE
HARRISBURG
W. LOWVILLE
NEW BREMEN
NEW BOSTON
DADVILLE
PETRIES CORS
LOWVILLE
HERKIMER
BARNES CORS.
BUSHES LANDING
W. MARTINSBURG
BOYD
RECTOR
MARTINSBURG
GLENFIELD
BRANTINGHAM
L E W I S
GREIG
HOUSEVILLE
MICHIGAN MILLS
TURIN
LYONS FALLS.
OTTER LAKE
COLLINSVILLE
OSWEGO
N. OSCEOLA
PORT LEYDEN
CONSTABLEVILLE
TALCOTTVILLE
SWANCOTT MILL
OSCEOLA
W. LEYDEN
ONEIDA
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

WEST TURIN: The surface rises by successive terraces from the intervale of Black River to the hill 1,000 feet above. The largest stream is Sugar River. At Lyons Falls there is an excellent waterpower on Black River a short distance below the entrance of Moose River. Here is located the Gould Paper Company, one of the largest paper mills in the north country. The soil is a deep, fertile, slaty and limestone loam.

Products: Hay, oats, corn and potatoes.

Average values of farm land range from $20 to $80 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

A line of the New York Central, formerly the Utica and Black River Railroad, extends north from Utica across Lewis, connecting Carthage with branches to Watertown, the Thousand Islands, Ogdensburg, Massena, and the north country. From Lowville the Lowville and Beaver Railroad extends northeast to Beaver Falls and Croghan; from Glenfield extends the Glenfield and Western, principally a lumbering railroad, running southwest to the lumber and pulpwood section of Tug Hill to the north end of the town of Osceola.

Improved Highways

A state highway from Utica passes through the center of Lewis County to Lowville, where three improved highways extend north; one running via Copenhagen to Watertown over the hill route, distance 27 miles; another via Carthage through the Black River valley, distance 32 miles; the third extends via Croghan, Beaver Falls, and Carthage to Watertown, distance 37 miles. When the Antwerp and Carthage highway is completed this will be the shorter route to the north country.

There are in the county about 80 miles of completed improved highways, with 8 miles additional under construction.

AVAILABLE MARKETS

Lowville, the county seat, is the central and most important local market. At the West Martinsburg cheese factory, two and one-half miles from Lowville, the large cheeses are manufactured for show purposes. At a recent Milk and Dairy Farm Exposition in New York City a cheese weighing 6,500 pounds was exhibited.

In Lewis County there are about 70 milk establishments. A large part of the milk is sold as market milk. Among the manufactured products are 5,000,000 pounds of American cheese, large amounts of Limburger and Munster cheeses, and nearly 14,000,000 pounds of condensed and evaporated milk. At Lowville is located one of the largest cold storage plants used wholly for dairy products.

The agricultural organizations are as follows:

Boonville Fair Association.
Granges: Pomona and twenty-one subordinate granges.
Lewis County Agricultural Society.
Lewis County Beekeepers' Association.
Lewis County Dairymen's League.
Lewis County Farm Bureau Association.
Lewis County Holstein-Friesian Breeders' Association.
Lyons Falls Farmers' Cooperative Association, Inc.
North Country National Farm Loan Association.

EDUCATIONAL FACILITIES

Approved courses in agriculture and home making are given at Lowville.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Beaver Falls, Constableville, Copenhagen, Harrisville, Lowville, Lyons Falls, Port Leyden and Turin.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	475,033 acres
Number of farms	3,343
Per cent of farm land improved	50.8

LIVE STOCK PRODUCTS

Milk sold	14,805,241 gal.
Cream sold	626 gal.
Butter fat sold	208,857 lbs.
Butter produced	387,922 lbs.
Cheese produced	6,405 lbs.
Eggs produced	636,297 doz.
Wool produced	2,292 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8,037
Cattle	59,116
Sheep	5,225
Swine	12,256
Poultry	98,569

BEES

Number of colonies	1,026

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	1,370	37,522 bu.
Oats	25,922	668,966 bu.
Wheat	24	423 bu.
Barley	1,605	41,283 bu.
Buckwheat	579	10,007 bu.
Rye	88	1,129 bu.
Hay and Forage	97,868	156,063 tons
Special Crops:		
Potatoes	4,102	627,771 bu.
Vegetables, other than potatoes	748	....
Dry edible beans	33	540 bu.
Dry peas	23	397 bu.
Fruits:		
Apples	29,341 trees	33,196 bu.
Peaches and nectarines	14 trees	2 bu.
Pears	256 trees	186 bu.
Plums and prunes	560 trees	119 bu.
Cherries	325 trees	50 bu.
Grapes	174 vines	1,197 lbs.
Small fruits	34 acres	58,373 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,129	2,937

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	7,450	7,366
Cattle	59,684	54,652
Sheep	2,708	1,845
Swine	8,118	7,868
Poultry	123,496	86,828

BEES

	1917 Number	1918 Number
Number of colonies	1,068	1,453

SELECTED CROPS

Cereals:	1917 Acres	1918 Acres	1918 Bushels
Corn	1,546	1,331	17,353
Oats	25,850	22,621	560,995
Barley	938	1,277	22,547
Buckwheat	731	1,150	15,034
Wheat (winter)	36	37	231
Wheat (spring)	52	316	3,353
Rye	152	135	1,276

Hay and Forage:	1917 Acres	1918 Acres	1918 Yield
Alfalfa	707	828	2,067 tons
Other hay	88,962	86,393	120,354 tons
Corn (ensilage)	8,053	6,750	42,415 tons
Corn (fodder)	....	2,167	....
Special Crops:			
Field beans	213	411	2,441 bu.
Cabbage	137	249	623 tons
Potatoes	3,220	3,418	353,343 bu.
Roots raised for stock food	....	356	....
Canning factory crops	15	10	....
Other vegetables and garden crops	544	560	....
Fruits:			
Apples	553	753	7,514 bu.
Peaches	....	3	10 bu.
Pears	....	1	3 bu.
Plums	....	12	13,000 lbs.
Cherries	....	7	5,800 lbs.
Vineyard	....	....	100 lbs.
Small fruits	67	218	....

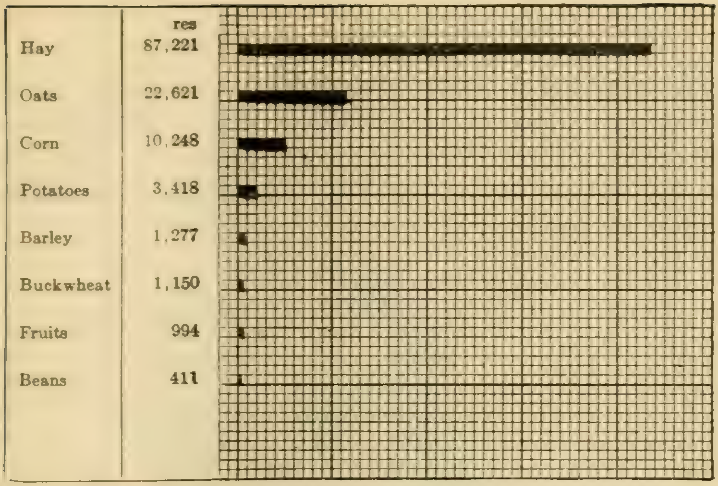


FIG. 89.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN LEWIS COUNTY

LIVINGSTON COUNTY

This county lies in the west central part of the state, in the valley of the Genesee River. It has an area of 403,840 acres. From north to south it extends approximately 35 miles, and from east to west 20 miles. The population of the various towns is given below:

Population by Townships

(Census of 1915)

Avon	3,862	Nunda	2,289
Caledonia	2,102	Ossian	666
Conesus	1,041	Portage	962
Geneseo*	3,348	Sparta	894
Groveland	1,699	Springwater	1,689
Leicester	1,811	West Sparta	800
Lima	2,118	York	2,802
Livonia	2,999		
Mount Morris	5,055	Total	38,427
North Dansville	4,290		

---

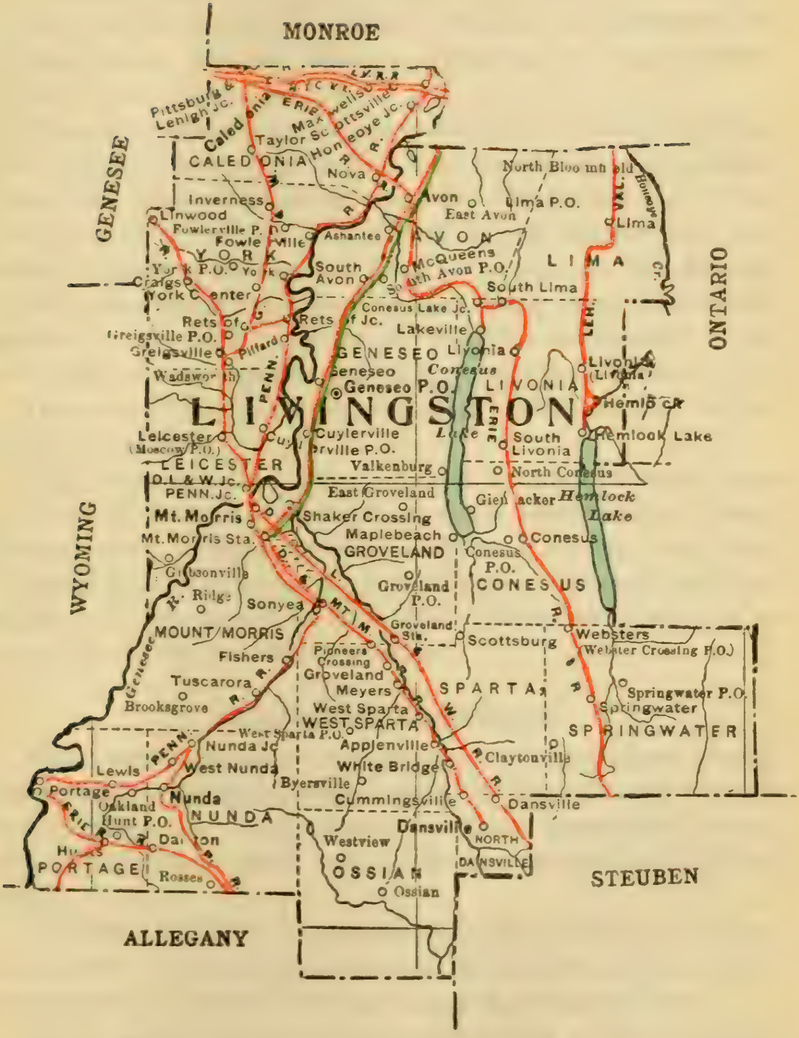
* Geneseo, in the town of Geneseo, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Genesee and Ontario in 1821, and named in honor of Robert R. Livingston. It was included in the Phelps and Gorham purchase, and later in the Morris reserve.

Before the advent of the whites, this county was the seat of several of the principal villages of the Seneca Nation, the original western door of the famous Long House of the Iroquois confederacy being near the site of the present village of Cuylerville. These people had made considerable advance in civilization and a large section of land had been cleared for cultivation. Corn, apples, and peaches were extensively produced. It is estimated that during the expedition of Sullivan he found at Cuylerville between 15,000 and 20,000 bushels of corn.

No settlements were attempted prior to the Revolution. Soon after its close many of the men who were with Sullivan in 1779 returned, secured land, and at once began the pursuit of agriculture.


MONROE
GENESEE
ONTARIO
WYOMING
STEUBEN
ALLEGANY
LIVINGSTON
CALEDONIA
YORK
AVON
LIMA
GENESEO
LIVONIA
LEICESTER
GROVELAND
CONESUS
MOUNT MORRIS
SPARTA
WEST SPARTA
SPRINGWATER
NUNDA
PORTAGE
OSSIAN
NORTH DANSVILLE
Pittsburg & Lehigh Jc.
Caledonia
Taylor
Honeoye Jc.
Nova
Avon
East Avon
North Bloomfield
Lima P.O.
Lima
Inverness
Linwood
Fowlerville P.O.
Fowlerville
Ashantee
York P.O.
York
Craigs
York Center
South Avon
McQueens
South Avon P.O.
South Lima
Conesus Lake Jc.
Lakeville
Retsof
Retsof Jc.
Greigsville P.O.
Greigsville
Piffard
Livonia
Livonia (Livonia)
Wadsworth
Geneseo
Conesus Lake
Hemlock
Hemlock Lake
Leicester
(Moscow P.O.)
Cuylerville
Cuylerville P.O.
Valkenburg
South Livonia
North Conesus
D.L.&W.Jc.
PENN.Jc.
East Groveland
Glen Packer
Mt. Morris
Shaker Crossing
Mt. Morris Sta.
Maplebeach
Conesus
Conesus P.O.
Gibsonville
Groveland P.O.
Ridge
Sonyea
Groveland Sta.
Scottsburg
Websters
Webster Crossing P.O.
Fishers
Pioneers Crossing
Groveland
Tuscarora
Meyers
Springwater P.O.
Springwater
Brooksgrove
West Sparta
West Sparta P.O.
Nunda Jc.
Appleville
Claytonville
Lewis
West Nunda
White Bridge
Portage
Byersville
Nunda
Cummingsville
Dansville
Oakland
Hunt P.O.
Dalton
Westview
Hunts
Rosses
Ossian
Genesee R.
ERIE R.R.
PENN. R.R.
D.L.&W. R.R.
L.V. R.R.
N.Y.C.
LEH. VAL.
Honeoye Cr.

MAP OF LIVINGSTON COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads

In 1797, Morris, who had promised to effect the extinguishment of the Indian title, held a treaty with the natives at Big Tree, now Geneseo, whereby, through the consent of Red Jacket, Cornplanter, and others, they ceded most of their lands to the whites. At this gathering Jeremiah Wadsworth represented the United States, William Shepard appearing for Massachusetts, who lay claim to this section.

The first settlements were made principally by immigrants from New England before the Indian title was finally extinguished. These men were all tillers of the soil. Their knowledge of the principles of agriculture is evidenced by the fact that the agricultural practices instituted in those early days are still followed as being best suited to the locality; and, being based on live-stock production, the fertility of the soil has been maintained. York and Caledonia were largely settled by a colony of Scotch.

The grave of Mary Jemison, the noted " white woman," is preserved at Portage.

Fifty years ago the mineral springs at Avon attracted large numbers of visitors, and Avon became a noted summer resort. Several noted sanitariums were established, among them being Congress Hall, Knickerbocker, and Allen and Carson's, the latter of which is now known as Avon Inn. The sulphur water is no longer in use for medicinal treatment.

DEVELOPMENT OF INDUSTRY

Wheat was the principal crop among the pioneers; later, during the ravages of the wheat weevil, it was largely superseded by the spring grains. In 1818, however, the census showed that Livingston County stood second only to Monroe in the production of wheat.

At about 1800 and later, considerable hemp, flax, and tobacco were grown. These are no longer produced, nor is broom corn, which was once largely cultivated along the Genesee Flats.

The raising of cattle and sheep forms one of the important industries, Livingston County leading in the number of sheep. The county is also celebrated for its choice herds of pure-bred cattle.

The county stands first in the production of beans and nursery stock, Groveland and Caledonia excelling in the production of the former. The wide proportions reached by the growing of nursery stock is due largely to the fact that climatic and soil conditions in the county are very favorable for fruit growing. The freedom of the section from scale and insect pests and fungus diseases also has considerable influence. There are about fifty nurseries, largely devoted to the production of fruit trees, centered around Dansville and Geneseo. An excellent jam kitchen, which handles products by the carload, is located in the town of Geneseo. A second kitchen, putting out high-grade products, is operated in the town of Avon.

In the production of canning factory crops Livingston County stands second to Oneida. The Genesee Flats at Mount Morris are largely devoted to the growing of vegetables. Crops grown for canning include mainly sweet corn, peas, and string beans; tomatoes, asparagus, and spinach are also raised for this purpose. Corn, oats, and potatoes have long been staple crops. Barley is important, and excellent crops of alfalfa are produced.

Livingston County produces all the rock salt mined in the state, the Retsof mines near Caledonia being among the largest.

CLIMATE AND RAINFALL

Climatological records for Livingston County are taken from the Avon station. The present observer is W. G. Markham.

Average dates for the last killing frost in spring and the first in fall are May 12 and October 6, respectively, giving a growing season of 147 days.

The following table, which summarizes records taken during the periods 1890–91 and 1895–1915, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT AVON

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	24.0	68	1906	—25	1904	2.12	1.21	1900	11.3
February.....	22.1	67	1906	—19	1914	1.86	0.92	1910	9.6
March........	33.2	81	1903	—10	1897	1.79	1.78	1913	5.6
April.........	45.0	87	1915*	13	1904	2.20	1.79	1901	3.8
May..........	56.9	95	1911	21	1903	2.77	1.23	1911	0.2
June.........	65.3	95	1913	33	1897	2.96	2.68	1914	......
July..........	70.9	103	1911	37	1898	3.52	2.01	1902	......
August.......	67.7	97	1911*	36	1913	2.96	1.70	1903	......
September....	61.9	95	1898	26	1913	2.64	1.65	1910	......
October.......	50.5	89	1900	14	1904	2.45	1.58	1900	0.3
November....	38.7	73	1909*	0	1905	1.88	1.57	1895	2.8
December.....	27.6	64	1908	—13	1914	1.75	1.44	1907	10.4
Year.........	47.0	103	1911	—25	1904	28.90	2.68	1914	44.0

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is an upland, rolling in the north and hilly in the south. The highest point in the county, which is 2,260 feet above sea level, is located in the northeast corner of Springwater. The hills on the southern border are 2,000 to 2,200 feet above tide. From their summits the surface declines toward the north, the extreme northern border being 550 to 800 feet above tide. The slopes are usually smooth and gradual, except along the banks of the streams, and nearly all of the land in the county is arable. The streams often flow in deep ravines.

The principal stream is the Genesee River, which flows through the western part of the county. In the south its banks are steep and precipitous, forming a picturesque gorge; further north the river is bordered by broad intervales subject to overflows in the spring. Its tributaries are Conesus Creek, Fall Brook, and Canaseraga Creek from the east, and Beards Creek and other small streams from the west. Hemlock and Honeoye outlets flow along the eastern border and a few tributaries of the Susquehanna rise in the southern part. Conesus Lake, near the center, and Hemlock Lake, along the eastern border, are the only considerable bodies of water.

DESCRIPTION BY TOWNSHIPS

AVON: The surface is a rolling and moderately hilly upland, terminating in flats on the Genesee River. The principal stream is Conesus Creek. On the uplands the soil is a sandy and gravelly loam intermixed with clay. On the flats it is a deep, rich alluvium.

Products: Dairy and general farm products.

Average values of farm land range from $50 to $150 an acre.

CALEDONIA: The surface is level or gently undulating, a portion of it being stony. Genesee River forms the eastern boundary. The soil is a clay loam underlaid by limestone.

Products: Dairy and general farm products, and beans.

Average values of farm land range from $50 to $100 an acre.

CONESUS: The surface is hilly. The Marrowback Hills in the eastern part rise about 1,000 feet above Hemlock Lake. A deep valley extends from the center of the town into Springwater. The soil is generally a silty or sandy loam.

Products: Dairy and general farm products.

Average values of farm land range from $35 to $100 an acre.

GENESEO: The surface is undulating, with an abrupt declivity of 200 to 300 feet toward the Genesee River on the west. Along the river are fertile flats averaging a half-mile in width. Fall Brook and several other small streams flow west into the river and east into Conesus Lake. The soil is loam, intermixed with clay or sand.

Products: Dairy and general farm products.

Average values of farm land range from $50 to $125 an acre.

GROVELAND: The surface is moderately hilly. In the west are extensive flats occupying about one-fourth of the town. Canaseraga Creek is the principal stream. This town contains excellent farming land. On the uplands the soil is loam, and on the flats it is a rich alluvium. This town excels in the production of beans, and ranks among the first in the state.

At Sonyea is located Craig Colony for Epileptics.

Products: Beans, and dairy and farm products.

Average values of farm land range from $50 to $125 an acre.

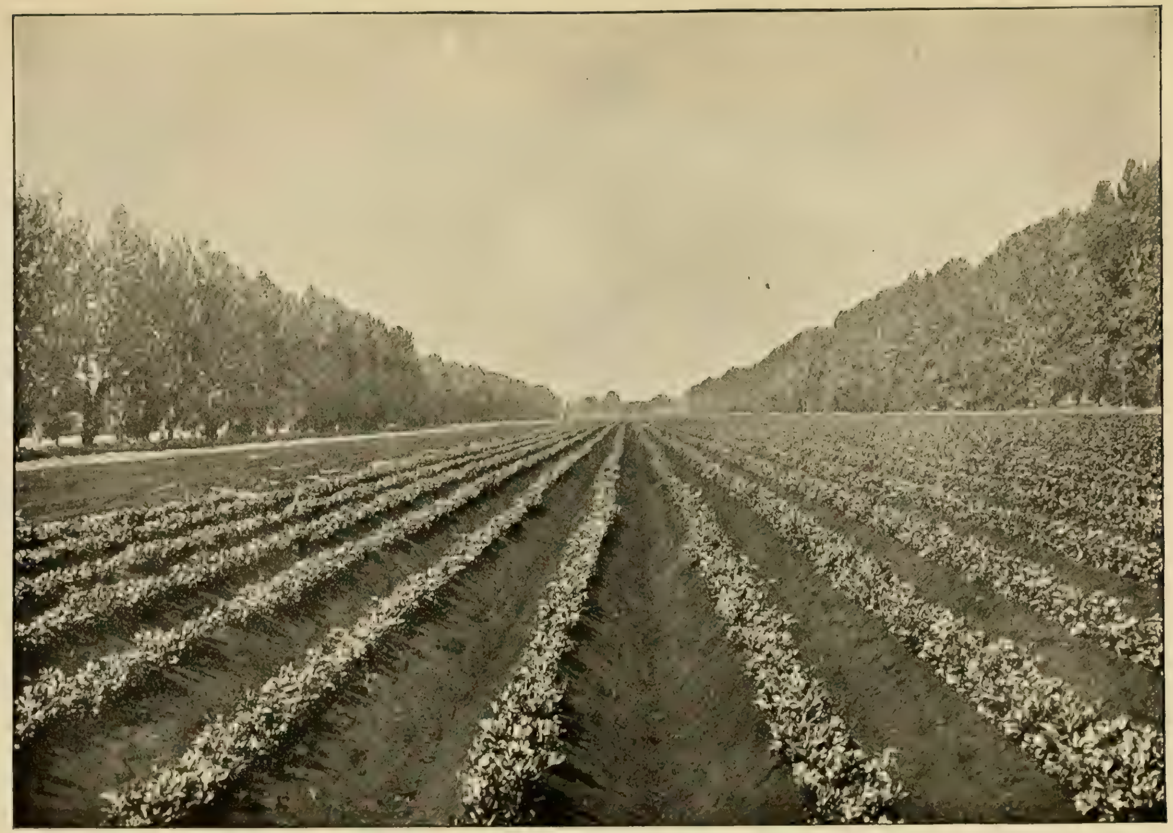


Fig. 90.— Celery on Muck Land, Also Showing Windbreak

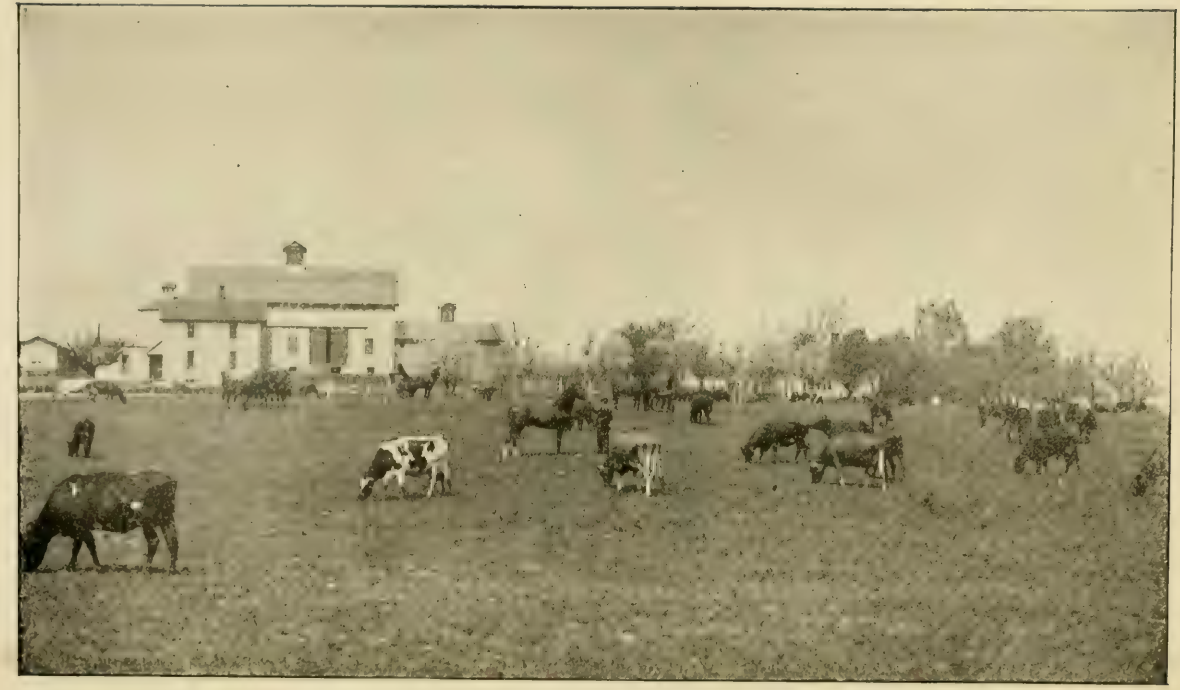


FIG. 91.— FARM VIEW NEAR AVON

LEICESTER: The surface is undulating, with extensive flats in the east. The Genesee River forms the southern and eastern boundaries. On the uplands the soil is a sandy and gravelly loam, while on the flats it is a rich alluvium.

Products: Dairy and general farm products.

Average values of farm land range from $25 to $100 an acre.

LIMA: The surface, which is undulating and hilly, is drained chiefly by Honeoye Creek, forming the eastern boundary. The soil in the southeast is clay and clayey loam. In the northwest it is sandy and gravelly loam.

Products: Dairy and general farm products.

Average values of farm land range from $50 to $100 an acre.

LIVONIA: The surface in the southern part is moderately hilly, and in the north it is undulating. Conesus and Hemlock lakes lie partly within the town. Their outlets are the principal streams. The soil in the valley is a clayey loam, and on the uplands a sandy and gravelly loam.

Products: Dairy and general farm products.

Average values of farm land range from $40 to $100 an acre.

MOUNT MORRIS: The surface is rolling and moderately hilly. It is drained by the Genesee River, which forms its western and northern boundaries. The soil is sandy and clayey loam.

Products: Canning crops and dairy and general farm products.

Average values of farm land range from $35 to $90 an acre.

NORTH DANSVILLE: The surface is hilly, the highest summits being 600 to 800 feet above the valleys. The hills are generally arable. Canaseraga Creek flows through the northwestern part, and Mill Creek through the south. The soil on the hills is a clayey and gravelly loam, and in the valleys a sandy loam.

Products: Dairy and general farm products.

Average values of farm land range from $50 to $200 an acre.

NUNDA: The surface is hilly, the highest summits, rising 2,000 feet, lying in the southeastern part. The soil is a sandy loam intermixed with gravel and clay.

Products: Dairy and general farm products.

Average values of farm land range from $20 to $75 an acre.

OSSIAN: The surface is broken and hilly, the highest summits having an elevation of 1,700 to 1,900 feet. The soil in the valleys is a gravelly loam, and on the hills a silty and sandy loam.

Products: Dairy and general farm products.

Average values of farm land range from $20 to $40 an acre

PORTAGE: The surface is hilly, the highest point rising to 1,900 feet in the southeastern part. Genesee River forms the western boundary of the town. Its banks are steep and rocky, 100 to 200 feet in height. In the eastern part the soil is a clayey and silty loam and in the west a sandy loam.

Products: Dairy and general farm products.

Average values of farm land range from $20 to $50 an acre.

SPARTA: The surface is hilly, the highest summits being 1,000 to 1,200 feet higher than Canaseraga Creek, which flows along the western boundary. The soil on the hills is a silty and gravelly loam, and in the valleys a sandy, clayey, and gravelly loam.

Products: Dairy and general farm products.

Average values of farm land range from $20 to $40 an acre.

SPRINGWATER: The surface is very hilly, the highest summits being 600 to 1,000 feet above the valley. The principal stream is the inlet of Hemlock Lake, Springwater Creek. Cohocton River rises in the southeastern part and flows south into Steuben County. The soil is a sandy and gravelly loam.

Products: Dairy and general farm products.

Average values of farm land range from $20 to $60 an acre.

WEST SPARTA: The surface is hilly, the southwestern part rising to a height of 1,900 feet. In the northeastern part is an extensive marsh known as the Canaseraga Swamp. Canaseraga Creek flows north along the eastern border. The soil is a clayey loam in the north and a sandy loam in the south.

Products: Dairy and general farm products.

Average values of farm land range from $20 to $40 an acre.

York: The surface is undulating, with a general inclination to the east. The soil in the center and south is a clayey loam, and in the northeast a sandy and gravelly loam.

Products: Dairy and general farm products.

Average values of farm land range from $50 to $80 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The Erie line running northwest from Corning enters the southeastern part of Livingston County and extends to the northwestern corner, where it turns west to Batavia and Buffalo. A second line of the Erie Railroad, which is operated by electricity, runs from Mount Morris to Rochester, intersecting the first line at Avon. A third line of the Erie crosses the southwestern part.

The Dansville and Mount Morris, from Dansville to Mount Morris, extends from the western part southeast to the southern part of the county.

The Delaware, Lackawanna and Western running between New York and Buffalo passes northwest across the county a little west of the center, forming a junction with the Pennsylvania railroad in the town of Leicester.

The Pennsylvania line extending southwest from Rochester passes through the western part of Livingston County, and connects with the Buffalo line at Hinsdale in Cattaraugus County.

The Genesee and Wyoming road extends through the towns of Leicester, York, and Caledonia, and connects with lines running to Rochester and Buffalo. The New York Central line between Canandaigua and Batavia passes through the extreme northern part of the town of Caledonia.

The Lehigh Valley, leading east and west, also crosses the same portion of the county.

A branch of the Lehigh extends from Rochester Junction in Monroe County south through Lima and Livonia to Hemlock Lake.

Improved Highways

A state road from Albany to Buffalo crosses the northern part of the county, connecting with roads to Rochester and with a road leading southwest from Avon to Nunda and Portageville.

Two macadamized roads extend from Geneseo toward the west, and from Mount Morris another improved road leads southeast to Dansville, from there running south to Hornell in Steuben County.

In addition to these there are improved highways in the eastern part of the county between Hemlock, Livonia Center, and Livonia, leading from this point to Lakeville and south through Conesus.

There are in the county 109 miles of completed improved highways, with 18 miles additional under construction.

AVAILABLE MARKETS

Although there are no cities in Livingston County, excellent markets are afforded by the villages of Dansville, Mount Morris, Avon, Geneseo, and Hemlock, all of which have extensive canning industries. Eight canning factories are located within the county. Two excellent jam kitchens are operated in the towns of Avon and Geneseo. At South Lima there is a large truck interest.

Probably 80 per cent of the potatoes grown in the southern part of the county are marketed by means of trucks coming from Rochester.

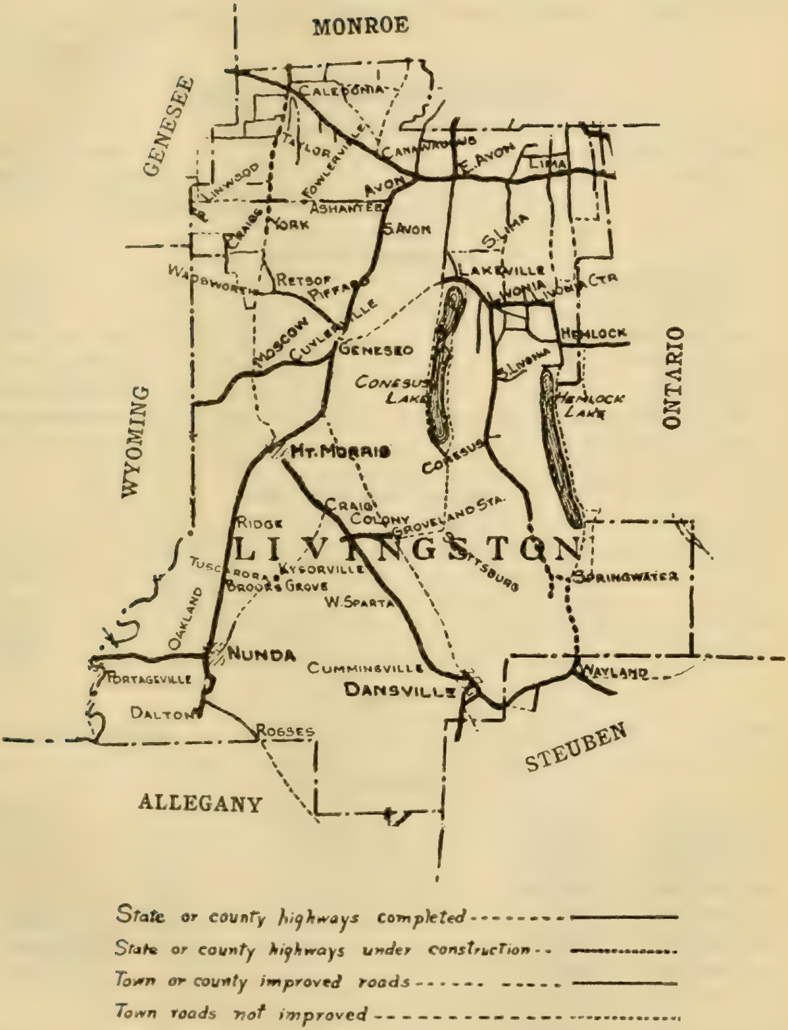
A large portion of the milk produced is shipped as market milk. Over 1,000,000 pounds of cheese is made, besides 5,000,000 pounds of condensed milk and a quantity of powdered whole and skim milk. A number of farms in the county are producing certified milk.

The agricultural organizations are as follows:

Caledonia Tri-County Fair Association.
Granges: Pomona and fourteen subordinate granges.
Hemlock Lake Union Agricultural Society.
Livingston County Dairymen's League.
Livingston County Fair.
Livingston County Farm Bureau Association.
Livingston County National Farm Loan Association.
Livingston County Potato Association.
Livingston County Sheep Breeders' Cooperative Association, Inc.
South Lima Growers' and Shippers' Association.

EDUCATIONAL FACILITIES

A state normal school is located at Geneseo. Approved courses in agriculture and home making are given at Avon and Dansville.


MONROE
GENESEE
CALEDONIA
TAYLOR
FOWLERVILLE
CANAWAUGUS
E. AVON
LIMA
LINWOOD
AVON
ASHANTEE
CRAIGS
YORK
S. AVON
S. LIMA
WADSWORTH
RETSOF
PIFFARD
LAKEVILLE
LIVONIA
LIVONIA CTR
CUYLERVILLE
MOSCOW
GENESEO
HEMLOCK
ONTARIO
CONESUS LAKE
S. LIVONIA
HEMLOCK LAKE
WYOMING
MT. MORRIS
CONESUS
CRAIG COLONY
GROVELAND STA.
RIDGE
LIVINGSTON
TUSCARORA
KYSORVILLE
SCOTTSBURG
SPRINGWATER
BROOKS GROVE
W. SPARTA
OAKLAND
NUNDA
CUMMINSVILLE
PORTAGEVILLE
DANSVILLE
WAYLAND
DALTON
ROSSES
STEUBEN
ALLEGANY
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

MAP SHOWING IMPROVED HIGHWAYS

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Avon, Caledonia, Dalton, Dansville, Griegsville, Groveland, Hemlock, Leicester, Lima, Livonia, Mount Morris, Nunda, and Springwater.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	389,536 acres
Number of farms	3,298
Per cent of farm land improved	79.8

LIVE STOCK PRODUCTS

Milk sold	4,169,215 gal.
Cream sold	49,918 gal.
Butter fat sold	430,718 lbs.
Butter produced	610,978 lbs.
Cheese produced	2,320 lbs.
Eggs produced	959,746 doz.
Wool produced	37,427 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	13,598
Cattle	31,403
Sheep	59,794
Swine	13,231
Poultry	166,149

BEES

Number of colonies	3,700

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	8,995	346,213 bu.
Oats	30,746	960,346 bu.
Wheat	21,036	520,775 bu.
Barley	2,566	58,676 bu.
Buckwheat	1,702	29,654 bu.
Rye	3,866	69,791 bu.
Hay and Forage	79,573	120,272 tons
Special Crops:		
Potatoes	11,163	1,438,699 bu.
Vegetables other than potatoes	5,435	....
Dry edible beans	18,446	255,244 bu.
Dry peas	78	1,150 bu.

Fruits:		Yield
Apples	144,958 trees	218,441 bu.
Peaches and nectarines	19,251 trees	12,767 bu.
Pears	8,634 trees	4,562 bu.
Plums and prunes	7,943 trees	3,839 bu.
Cherries	7,941 trees	3,183 bu.
Quinces	880 trees	273 bu.
Grapes	95,909 vines	721,430 lbs.
Small fruits	204 acres	326,104 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1818)

	1917 Number	1918 Number
Farms for which reports were received	3,032	3,257

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	13,500	12,766
Cattle	29,804	28,601
Sheep	43,990	45,175
Swine	9,803	9,262
Poultry	169,575	138,288

BEES

	1917 Number	1918 Number
Number of colonies	3,258	3,496

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	5,524	5,686	122,833 bu.
Oats	21,332	27,305	803,813 bu.
Barley	3,103	3,153	76,886 bu.
Buckwheat	3,190	2,680	42,534 bu.
Wheat (winter)	30,710	30,369	830,602 bu.
Wheat (spring)	193	302	5,185 bu.
Rye	3,968	4,437	77,141 bu.

Hay and Forage:			
Alfalfa	6,558	6,844	16,735 tons
Other hay	74,860	64,492	84,336 tons
Corn (ensilage)	4,956	5,009	33,866 tons
Corn (fodder)	....	1,680	....

Special Crops:	1917	1918	
	Acres	Acres	Yield
Field beans	25,346	37,010	325,245 bu.
Cabbage	739	1,042	8,463 tons
Potatoes	7,615	7,471	784,722 bu.
Roots raised for stock food	....	190	....
Canning factory crops	4,918	4,782	....
Other vegetables and garden crops	1,434	1,383	....

Fruits:	1917 Acres	1918 Acres	1918 Yield
Apples	4,610	5,721	31,075 bu.
Peaches	341	459	15,471 bu.
Pears	181	238	2,844 bu.
Plums	35	90	113,970 lbs.
Cherries	102	126	6,125 lbs.
Quinces	....	21	94 bu.
Vineyard	187	243	361,808 lbs.
Small fruits	234	211	....

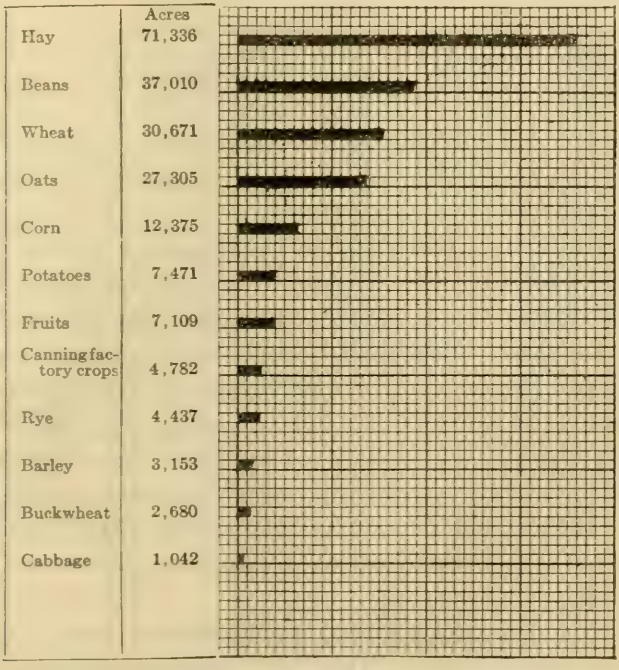


FIG. 92. CHART SHOWING RELATIVE ACERAGE OF CROPS IN LIVINGSTON COUNTY

MADISON COUNTY

This county lies in the central part of the state. It has an area of 416,000 acres. It extends from north to south approximately 30 miles and from east to west 23 miles.

The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Oneida (city)	9,461
Brookfield	2,330
Cazenovia	3,867
De Ruyter	1,267
Eaton	2,561
Fenner	836
Georgetown	989
Hamilton	3,651
Lebanon	1,116
Lenox*	5,517
Lincoln	950
Madison	1,836
Nelson	1,230
Smithfield	904
Stockbridge	1,544
Sullivan	3,683
Total	41,742

---

* Wampsville, in the town of Lenox, is the county seat.

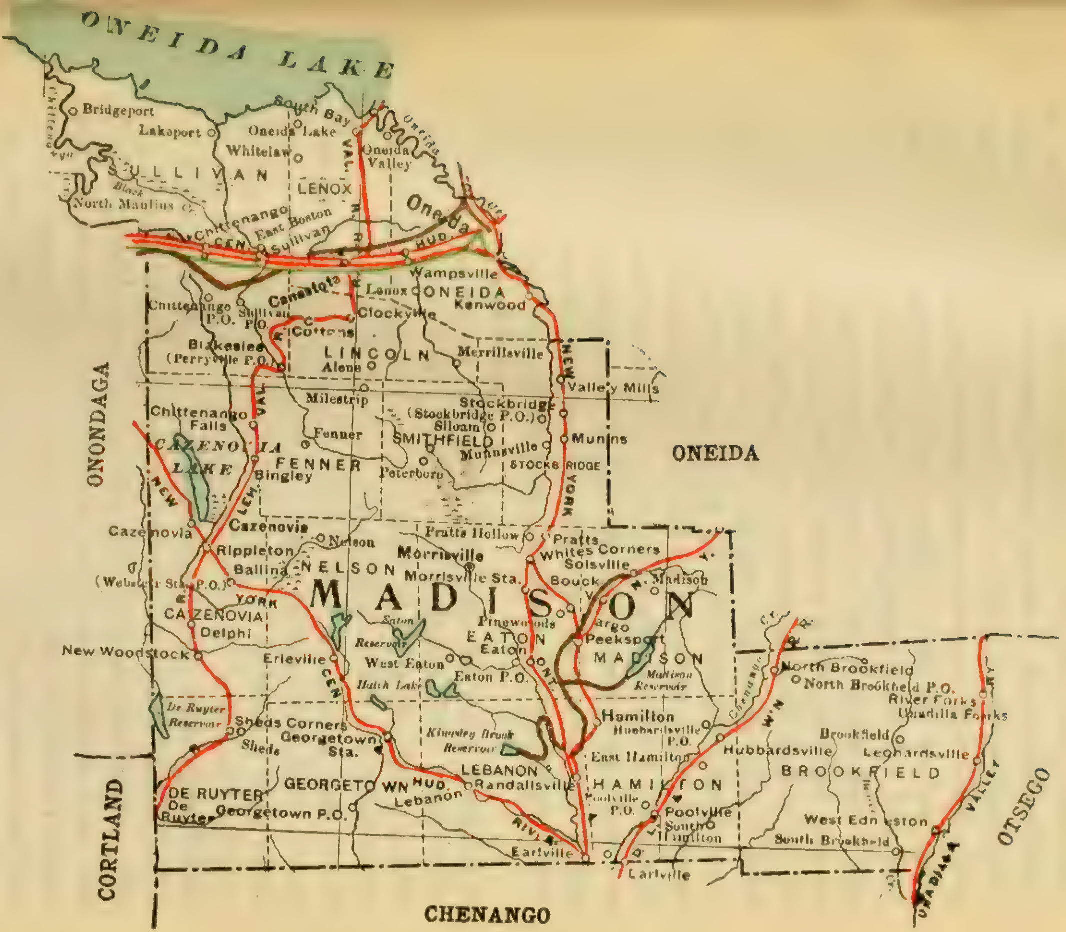
Note: Oneida now has a population of 10,500

HISTORICAL ASSOCIATIONS

Madison County was formed from Chenango in 1806, and named in honor of President Madison.

Until after the Revolution it was occupied by the Oneida Indians, a peaceful tribe, friendly to the colonists, and who consequently suffered attack from the tribes in league with the British cause. The first whites in the county were squatters from the Mohawk valley, who settled on the Oneida Indian reservation in the town of Sullivan in 1790. The following year they removed to the vicinity of Chittenango. A settlement was also made in Brookfield in 1791. Within the next few years various others were established and the county was rapidly filled, principally with people from New England, a few being Scotch and Dutch immigrants.

The first wagon road, opened in 1790, followed the Indian trail west from Oneida Castle. This road later became known as the Genesee Turnpike, a famous mail route between Albany and Buffalo.


ONEIDA LAKE
Bridgeport
Lakeport
South Bay
Oneida Lake
Whitelaw
Oneida Valley
Oneida
SULLIVAN
LENOX
North Manlius Cr.
Chittenango
East Boston
Sullivan
Oneida
CEN.
HUD.
VAL.
Wampsville
Lenox
ONEIDA
Kenwood
Canastota
Chittenango P.O.
Sullivan P.O.
Clockville
Cottons
Blakeslee (Perryville P.O.)
LINCOLN
Alene
Merrillsville
Valley Mills
Milestrip
Stockbridge
(Stockbridge P.O.)
Siloam
Munns
Fenner
SMITHFIELD
Munnsville
STOCKBRIDGE
ONONDAGA
Chittenango Falls
CAZENOVIA LAKE
FENNER
Bingley
Peterboro
ONEIDA
NEW
YORK
LEH.
Cazenovia
Rippleton
Nelson
Pratts Hollow
Pratts
Whites Corners
Solsville
Morrisville
Ballina
NELSON
Morrisville Sta.
Bouck
Madison
(Webster Sta. P.O.)
YORK
CAZENOVIA
Delphi
MADISON
Eaton Reservoir
Pinewoods
EATON
Eaton
Fargo
Peeksport
MADISON
Madison Reservoir
New Woodstock
Erieville
West Eaton
Eaton P.O.
Hatch Lake
ONT.
North Brookfield
North Brookfield P.O.
River Forks
Unadilla Forks
De Ruyter Reservoir
Sheds Corners
Sheds
Georgetown Sta.
Kingsley Brook Reservoir
Hamilton
Hubbardsville P.O.
East Hamilton
Hubbardsville
Brookfield
Leonardsville
W.N.
BROOKFIELD
CEN.
LEBANON
HAMILTON
CORTLAND
DE RUYTER
De Ruyter
GEORGETOWN
Georgetown P.O.
HUD.
Randallsville
Lebanon
RIV.
Earlville
Poolville P.O.
Poolville
South Hamilton
West Edmeston
South Brookfield
VALLEY
OTSEGO
UNADILLA
Earlville
CHENANGO

Map of Madison County, Showing Townships

Red, railroads; green, electric roads; brown, canals

[illegible]

DEVELOPMENT OF INDUSTRY

An opening in the forest near Madison Lake furnished corn grounds for the Indians long before white men came to Madison County; apples were then growing in several localities, including Stockbridge Hill. The early settlers, who were practically all home seekers, cleared land and began at once to grow wheat, corn, and garden vegetables. Many bought a cow or two and some sheep. Barley and fruit were much grown from the first, and the strawberry apple was originated in the southern part of the county at an early date. While wheat was the principal crop in the northern part, the southern part was devoted largely to the production of grass. In 1816 the first commercial crop of hops was marketed in New York City. A few years later the growing of hops became one of the chief industries of the county and continued as such for many years, standing second only to Oneida in the amount produced. Within the last twenty years there has been a marked decrease in the acreage but there are still a number of large hopyards, especially in the towns of Stockbridge, Madison, Oneida, and Eaton.

About the time of the Civil War, and for many years after, large quantities of cheese were manufactured. This business has been on the decline since about 1890, while at the same time the production of milk has been greatly increased. Dairying is the leading industry; all the railroads now run special milk trains and practically all the milk is shipped to New York City. Stock raising receives considerable attention. The blooded stock of the county is a prominent feature, especially of the Holstein breed.

The alfalfa crop, in which Madison County takes second place, has a material influence on the extent of the dairy industry, as it makes possible the keeping of a great number of animals. The soil is well suited to the growth of alfalfa and produces from three to five tons per acre, where from one to two and one-half tons of hay were formerly raised. Agriculture of the present day may be summed up as dairy farming and the production of canning crops and the special crops of hops, alfalfa, onions, and celery. Several hundred acres of muck land in the north are given over to the production of onions and celery. Lettuce and peas are also important products. There are canning factories at several points for peas, as well as for beans, beets, corn, etc., and a large acreage is devoted to the production of these crops. Truck crops are grown largely in the vicinity of Oneida and Canastota. Although fruit is somewhat limited in variety, the fruit industry is profitable in many localities. Large quantities of apples of excellent quality are grown, particularly in the highlands.

The northern part has the climate of the Great Lakes and the southern part has that of the Atlantic.

CLIMATE AND RAINFALL

Climatological records for Madison County are taken from the De Ruyter station, which lies at an elevation of 1,300 feet above sea level. B. D. Crandall, the present observer, has served since the opening of the station in 1903.

The average dates for the last killing frost in spring and the first in fall are May 23 and September 30, respectively; length of growing season, 130 days.

The following table, which summarizes records from 1903 to 1917, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT DE RUYTER

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	22.2	64	1906	—36	1904	3.25	1.00	1915	16.6
February	19.2	58	1906	—30	1916*	2.05	3.00	1914	18.9
March	29.3	80	1910	—24	1916	3.16	1.98	1909	14.1
April	42.2	83	1915	9	1909	2.86	1.64	1914	5.2
May	53.9	92	1911	17	1903	3.40	2.64	1916	0.4
June	60.9	90	1907	29	1913	4.29	3.01	1910	......
July	66.8	98	1911	37	1912*	4.22	2.34	1904	......
August	64.9	96	1916	35	1912	3.65	2.61	1905	......
September	59.8	92	1913	22	1913	4.18	2.00	1915	T.
October	49.1	88	1913	16	1904	3.81	1.90	1913	1.0
November	36.2	79	1913	—3	1903	2.79	1.55	1912	11.0
December	21.1	74	1914	—28	1914	3.04	1.52	1905	15.9
Year	43.8	98	1911	—36	1904	40.70	3.01	1910	83.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Madison County has two natural divisions — the comparatively level lowlands of the lake plain on the north and the rolling to hilly uplands in the south. The latter, which is much the larger, is made up of high, broad hills and more or less narrow valleys, the largest of which have been partly filled with glacial debris. The elevation of this upland section varies from 1,000 to 1,200 feet above sea level in the valleys to hills exceeding 2,000 feet in a few places. The highest point is in the township of Georgetown, 2,160 feet.

The main valley enters the county at Earlville and extends northward across the county. At Earlville a branch extends in a northeasterly direction through East Hamilton, Hubbardsville, and North Brookfield Station. At Randallsville a narrow branch passes a little west of north through Easton and Morrisville, and at Peckport another branch extends to the northeast by Bouckville and Solsville. These valleys have an average width of about one mile. Several other narrow valleys dissect the uplands. The southern half of the county is drained by the tributaries of the Unadilla, Tioughnioga, and Chenango rivers.

The smaller of the two physiographic divisions occupies the northern end of the county. Its elevation varies from 370 feet above tide, the present level of Oneida Lake, bordering it on the north, to about 450 feet. With the exception of two hills, Allis Hill and another hill between Chittenango Station and Sullivan, each of which attain a height of from 500 to 600 feet, this section is a nearly level plain, with large, swampy tracts bordering Oneida Lake. The Erie Canal, which is approximately the dividing line between this and the uplands, has a uniform level across the county from east to west. This is a part of the " 60-mile level," which extends from Syracuse to Utica. Narrow valleys extend from this plain southward into the upland region, the principal ones being those occupied by Chittenango, Cowaselon, and Oneida creeks. The latter valley forms the northern end of the main valley of the upland section.

Madison County lies on the watershed between the Great Lakes-St. Lawrence basin and the Chenango-Susquehanna-Chesapeake basin. The drainage of the county is about equally divided between these two drainage systems, although some portion of it reaches the Mohawk-Hudson system by way of Oriskany Creek and a system of canal feeders.

On the flat lands of the north the soil is generally a red clay, with great quantities of muck and marl in the swampy regions. On the northern slopes of the hills the soil is a gravelly loam intermixed with lime and plaster, and is very productive. Farther south the soil on the hills is a clayey, gravelly, and shaly loam, and in the valleys a gravelly loam and alluvium.

DESCRIPTION BY TOWNSHIPS

BROOKFIELD: The surface is a hilly upland broken by the valleys of Unadilla River and Beaver Creek. Several small streams take their rise in this town. The soil is generally a gravelly loam, with a rich alluvium in the valleys.

Products: Dairy products, oats, buckwheat, corn, potatoes, onions, celery, and root crops.

Average values of farm land range from $10 to $60 an acre.

CAZENOVIA: The surface is a rolling upland, broken by the valleys of Chittenango and Limestone creeks. The hills in the southern part reach a height of 1,700 feet. In the northern and central portions the soil is a gravelly loam; in the south it is a clayey loam underlaid by hardpan.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, canning crops, and fruit.

Average values of farm land range from $25 to $160 an acre.

DE RUYTER: The surface consists of a hilly upland, broken by the valley of Tioughnioga River and its tributaries. The soil is a sandy and gravelly loam on the hills and alluvium in the valleys.

Products: Dairy products, oats, buckwheat, corn, potatoes.

Average values of farm land range from $25 to $75 an acre.

EATON: The surface is a rolling upland, broken by the valley of the Chenango River into two ridges, whose summits are 1,500 to 1,600 feet above sea level. The soil is a gravelly loam intermixed with clay in the valleys.

Products: Dairy products, truck crops, hay, corn, oats, buckwheat, and hops.

Average values of farm land range from $20 to $100 per acre.

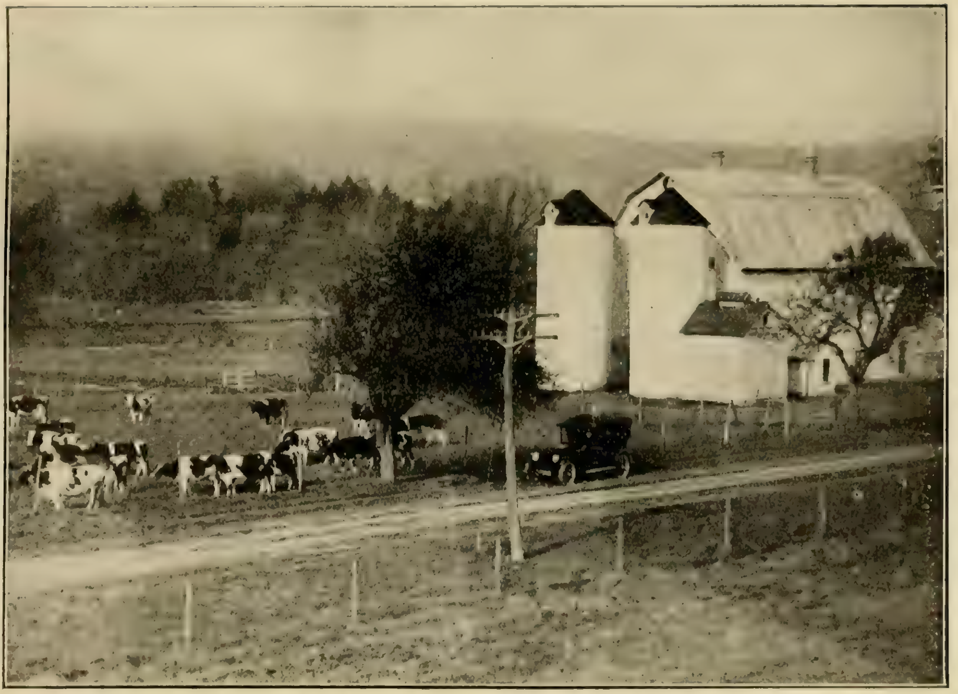


Fig. 93.— Dairy Farm Near Munnsville, Owned by Clark W. Davis

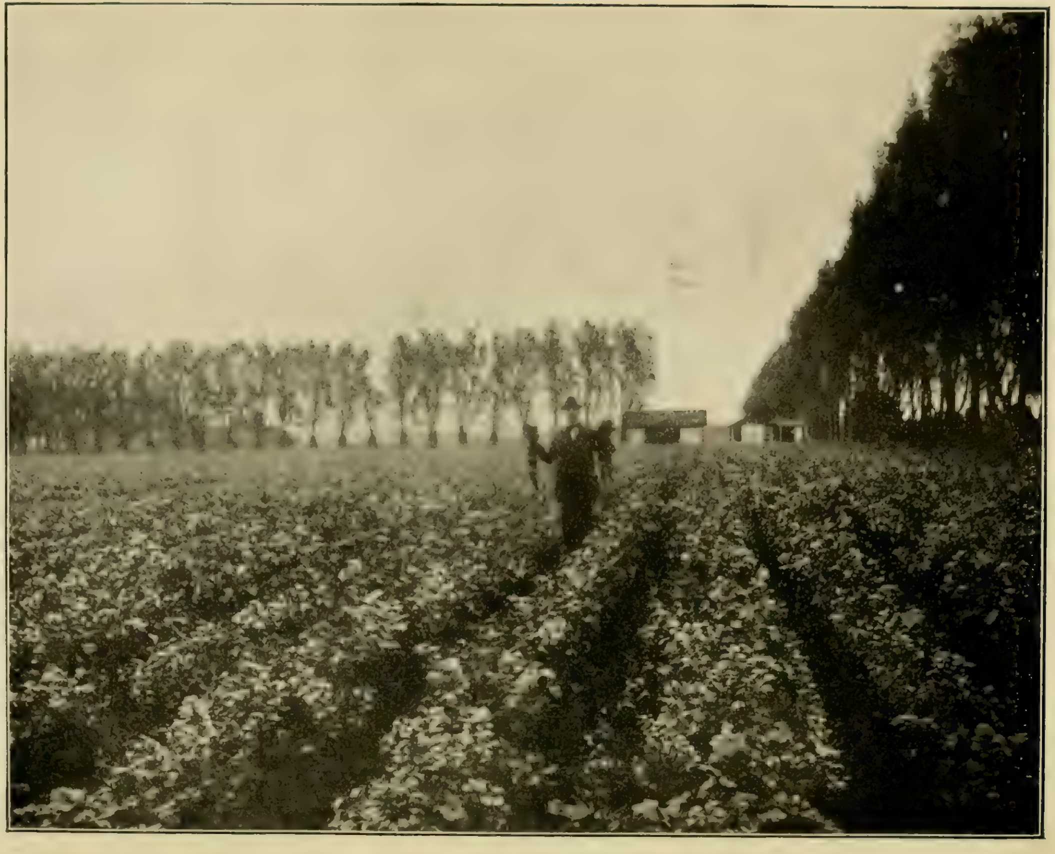


Fig. 94.— Celery Field Owned by Hon. Milton DeLano, Canastota
Note Windbreaks at Rear and Side

FENNER: The surface is a rolling upland. Canaseraga and Chittenango creeks have their sources in this town. The soil is a gravelly and clayey loam.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, fruit, and canning crops.

Average values of farm land range from $25 to $60 an acre.

GEORGETOWN: The surface is a hilly upland, broken by the valley of Otselic Creek into two ridges. The summits of the hills are 500 to 600 feet above the valleys, which are about 1,500 feet above sea level. The soil on the hills is yellow loam, and in the valleys a gravelly loam.

Products: Dairy products, hay, corn, oats, buckwheat, and potatoes.

Average values of farm land range from $10 to $60 an acre.

HAMILTON: The surface is a rolling upland, broken by the valleys of the Chenango River and its east branch. The soil is a gravelly loam in the valleys and a clayey loam on the hills.

Products: Dairy products, canning crops, hay, corn, oats, buckwheat, peas for New York market.

Average values of farm land range from $20 to $100 an acre.

LEBANON: The surface is a hilly upland lying between the Chenango and Otselic rivers. The summits in the western part are from 500 to 800 feet above the valleys. The valley of the Chenango River extending through the eastern part is about one mile wide and is bordered by steep hillsides. The southern streams are small brooks. On the hills the soil is a yellow loam underlaid by hardpan. In the valleys it is alluvium.

Products: Dairy products, hay, corn, oats, buckwheat, truck crops, and peas.

Average values of farm land range from $20 to $100 an acre.

LENOX: The surface is level in the north and moderately hilly in the south. Canastota and Cowaselon creeks flow through the town, and the Cowaselon Swamp occupies a portion of the northern part. The soil in the north is alluvium. In the south it is a gravelly and clayey loam.

Products: Dairy products, canning crops, onions, celery, root crops, fruit, and general farm crops.

Average values of land range from $15 to $60 in the uplands and from $100 to $300 in the muck lands.

LINCOLN: The surface is a moderately hilly upland with a general slope to the north. Cowaselon Creek is the principal stream. The soil is a gravelly and clayey loam.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, fruit, canning crops, and peas for New York market.

Average values of farm land range from $25 to $60 an acre.

MADISON: The surface is a rolling upland. The principal stream is Oriskany Creek. In the valleys the soil is a gravelly loam. On the hills it is clayey loam. Lake Moraine, one of the state reservoirs, is noted for the private summer cottages on its shores.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, fruit, canning crops, buckwheat, hops, and peas for New York market.

Average values of farm land range from $20 to $100 an acre.

NELSON: The surface is a rolling upland. The principal stream is Chittenango Creek. The soil is generally a gravelly loam.

Products: Dairy products, hay, corn, oats, buckwheat, onions, celery, and root crops.

Average values of farm land range from $20 to $60 an acre.

ONEIDA: This town is largely occupied by the city of Oneida. The surface is level or undulating.

Products: Dairy products, corn, oats, alfalfa, potatoes, and wheat.

Average values of farm land range from $25 to $100 an acre.

SMITHFIELD: The surface is a hilly and rolling upland. The principal streams are Cowaselon and Oneida creeks. The soil is sandy, gravelly loam.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, fruit, canning crops, onions, celery, and root crops.

Average values of farm land range from $25 to $60 an acre.

STOCKBRIDGE: The surface is a rolling upland, broken by the deep valley of Oneida Creek. This creek furnishes a number of valuable mill sites. The average elevation is 900 to 1,300 feet above sea level. Oriskany Creek takes its rise in the southern part. The soil is a clayey and gravelly loam, and there are extensive deposits of limestone and gypsum.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, fruit, canning crops, and hops.

Average values of farm land range from $25 to $100 an acre.

SULLIVAN: The surface is level in the north, and rolling in the south. A large area in the northern part bordering on the lake is low and swampy. Canaseraga and Chittenango creeks are the principal streams. The soil in the north is a clayey loam, alternating with muck and marl. In the south it is gravelly loam.

Products: Dairy products, corn, oats, alfalfa, potatoes, wheat, fruit, canning crops, onions, celery, and root crops.

Average values of farm land range from $15 to $75 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The main line of the New York Central Railroad passes through the northern part of Madison County, as does also the West Shore Railroad, which is operated by the New York Central. The West Shore road has been equipped with third rail from Utica to Syracuse and is operated for both passengers and express. Another line of the New York Central runs from Syracuse southeast across the county, connecting with the New York, Ontario and Western at Earlville in the southern part.

The New York, Ontario and Western passes through the eastern part of the county, extending from Oswego to New York. A branch runs between Whites Corners in Eaton, and Randallsville in Lebanon; another division extends through the town of Madison northeast, sending branches to Rome and Utica.

The Delaware, Lackawanna and Western passes through the town of Hamilton, making connections at Utica with points east and west, and at Binghamton with points south.

The western part of the county is reached by the Lehigh Valley Railroad, which connects at Canastota in the town of Lenox, and at Rippleton in the town of Cazenovia with the New York Central, and extends through to Cortland, where it connects with the Delaware, Lackawanna and Western.

The old Erie Canal, which passes through the northern part, is navigable for small barges only.

Improved Highways

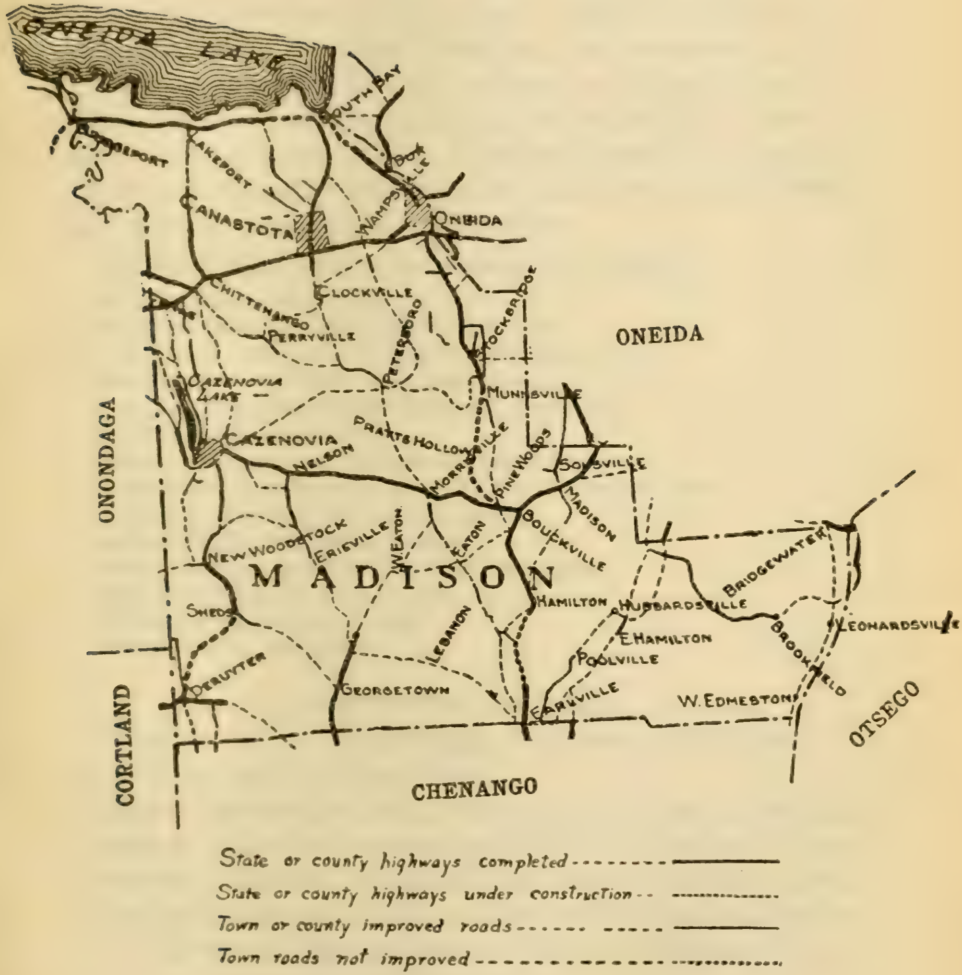
Near the southern shore of Oneida Lake an improved highway extends across the northern towns, and from South Bay to Canastota where it meets the road crossing the state. The latter road also passes through Oneida, from which place two other roads lead northwest to Rome. An improved highway extends from Oneida south to Munnsville. This is being extended to intersect the Cherry Valley turnpike at Pine Woods and connect through Bouckville to Oriskany Falls in Oneida County; roads at the latter place lead direct to Rome and Utica.

From Bouckville a highway leads south to Hamilton, and from Georgetown another leads south into Chenango County. A road from the city of Cortland enters the west side of the town of De Ruyter.

There are in the county 89 miles of completed improved highways, 23 miles additional being under construction.

AVAILABLE MARKETS

Oneida and Canastota are the two principal markets within the county. Oneida is situated in the center of a hop and dairy region. Extensive canning factories are located at this place.


ONEIDA LAKE
SOUTH BAY
BRIDGEPORT
LAKEPORT
CANASTOTA
DURHAMVILLE
WAMPSVILLE
ONEIDA
CHITTENANGO
CLOCKVILLE
PERRYVILLE
PETERBORO
STOCKBRIDGE
ONEIDA
CAZENOVIA LAKE
CAZENOVIA
MUNNSVILLE
PRATTS HOLLOW
NELSON
MORRISVILLE
PINE WOODS
SOLSVILLE
MADISON
BOUCKVILLE
ONONDAGA
NEW WOODSTOCK
ERIEVILLE
W. EATON
EATON
MADISON
HAMILTON
HUBBARDSVILLE
BRIDGEWATER
SHEDS
E. HAMILTON
LEONARDSVILLE
LEBANON
POOLVILLE
BROOKFIELD
DERUYTER
GEORGETOWN
EARLVILLE
W. EDMESTON
OTSEGO
CORTLAND
CHENANGO
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Canastota leads in handling hay, celery, and onions. In Canastota and Bouckville are extensive plants manufacturing cider vinegar.

Both Syracuse and Utica are good nearby markets. New York City, however, is the greatest market for products not consumed within the county, including large quantities of milk.

Over two-thirds of the milk produced in Madison County is shipped to New York City in the form of market milk. Manufactured dairy products include 2,000,000 pounds of cheese and 12,500,000 pounds of condensed and evaporated milk. Creamery butter is manufactured to some extent.

There are eight canning factories in the county.

Bridgeport Milk Association.
Brookfield-Madison County Agricultural Society.
Central New York Milk Producers' Association, Inc.
Chenango National Farm Loan Association.
DeRuyter Co-operative Milk Producers' Association.
Four-County Fair Association.
Granges: Pomona and thirteen subordinate granges.
Madison-Chenango Counties Holstein-Friesian Breeders' Club.
Madison County Farm Bureau Association.
Madison County Dairymen's League.
Madison County National Farm Loan Association.
Madison County Pea Shippers, Inc.
Morrisville Agricultural Society.
Oneida Poultry Association.

EDUCATIONAL FACILITIES

Hamilton is the seat of Colgate University, and Morrisville of the State School of Agriculture.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Brookfield, Canastota, Cazenovia, De Ruyter, Earlville, Eaton, Erieville, Georgetown, Hamilton, Leonardsville, Madison, Morrisville, Munnsville, New Woodstock, North Brookfield, Oneida, Perryville, Peterboro, and Chittenango.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	381,434 acres
Number of farms	4,042
Per cent of farm land improved	74.3

LIVE STOCK PRODUCTS

Milk sold	19,150,029 gal.
Cream sold	4,349 gal.
Butter fat sold	366,733 lbs.
Butter produced	202,868 lbs.
Cheese produced	160 lbs.
Eggs produced	1,455,508 doz.
Wool produced	4,446 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	11,282
Cattle	59,278
Sheep	7,602
Swine	7,750
Poultry	211,716

BEES

Number of colonies	2,753

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	5, 960	212, 790 bu.
Oats	23, 261	712, 637 bu.
Wheat	680	14, 466 bu.
Barley	2, 353	66, 006 bu.
Buckwheat	4, 208	111, 431 bu.
Rye	115	1, 734 bu.
Hay and forage	107, 320	238, 587 tons
Special Crops:		
Potatoes	4, 566	619, 283 bu.
Vegetables, other than potatoes	6, 718	....
Dry edible beans	214	2, 371 bu.
Dry peas	127	4, 303 bu.
Fruits:		
Apples	140,569 trees	225,464 bu.
Peaches and nectarines	216 trees	66 bu.
Pears	6,563 trees	6,031 bu.
Plums and prunes	9.462 trees	4,903 bu.
Cherries	7.105 trees	1.632 bu.
Grapes	13, 790 vines	202, 800 lbs.
Quinces	31 trees	12 bu.
Small fruits	212 acres	302,446 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,337	3,553
LIVE STOCK AND POULTRY		
Horses and mules	10,516	9,660
Cattle	55,588	51,288
Sheep	3,653	2,795
Swine	5,226	5,063
Poultry	222,675	184,352
BEES		
Number of colonies	1,878	1,245

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	3,283	3,115	79,932 bu.
Oats	20,539	17,409	289,486 bu.
Barley	2,839	2,902	54,932 bu.
Buckwheat	4,008	9,450	63,754 bu.
Wheat (winter)	1,924	2,290	41,225 bu.
Wheat (spring)	235	466	4,986 bu.
Rye	132	137	1,449 bu.
Hay and Forage:			
Alfalfa	19,842	16,779	31,295 tons
Other hay	81,200	76,580	103,906 tons
Corn (ensilage)	12,664	11,281	76,420 tons
Corn (fodder)	....	1,695	....
Special Crops:			
Field beans	540	1,109	6,391 bu.
Cabbage	539	968	2,858 tons
Potatoes	3,518	4,250	318,775 bu.
Roots raised for stock food	....	223	....
Canning factory crops	2,846	2,832	....
Other vegetables and garden crops	1,066	2,086	....
Fruits:			
Apples	3,394	4,300	107,967 bu.
Peaches	5	46	468 bu.
Pears	76	94	1,570 bu.
Plums	39	177	22,784 lbs.
Cherries	185	118	79,789 lbs.
Vineyard	33	13	14,450 lbs.
Small fruits	1,046	191	....

	Acres
Hay	93,359
Oats	17,409
Corn	16,091
Buckwheat	9,450
Fruits	4,939
Potatoes	4,250
Barley	2,902
Canningfactory crops	2,832
Wheat	2,756
Beans	1,109
Cabbage	968

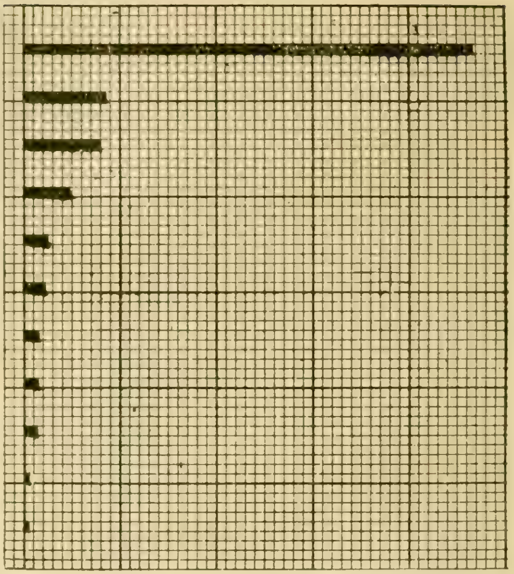
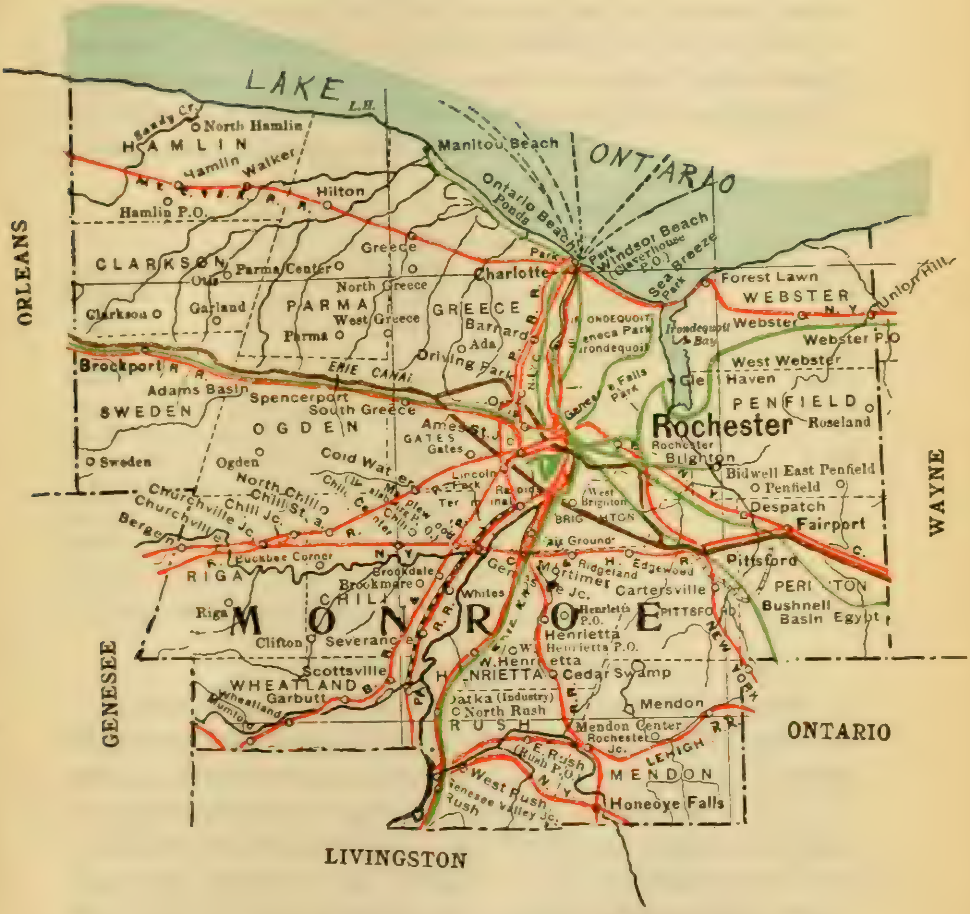


FIG. 95.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN MADISON COUNTY


LAKE ONTARIO
L.H.
Sandy Cr.
North Hamlin
HAMLIN
Hamlin
Walker
Hamlin P.O.
Hilton
Manitou Beach
Ontario Beach
Ponds
Park
Windsor Beach
(Glenhouse P.O.)
Sea Breeze
Sea Park
Forest Lawn
WEBSTER
Union Hill
Webster
Webster P.O.
CLARKSON
Parma Center
Otis
Greece
Charlotte
North Greece
Clarkson
Garland
PARMA
West Greece
Parma
GREECE
Barnard
Ada
Driving Park
IRONDEQUOIT
Seneca Park
Irondequoit
Irondequoit Bay
Genesee Falls Park
West Webster
Glen Haven
Brockport
ERIE CANAL
Adams Basin
Spencerport
South Greece
SWEDEN
OGDEN
PENFIELD
Roseland
Rochester
Rochester Brighton
GATES
Gates
Sweden
Ogden
Cold Water
North Chili
Chili St'a.
Chili Jc.
Churchville
Churchville Jc.
Bergen
Lincoln Park
West Brighton
BRIGHTON
Bidwell
East Penfield
Penfield
Despatch
Fairport
Pittsford
Fair Ground
Ridgeland
Edgewood
Mortimer
Cartersville
Buckbee Corner
RIGA
Brookdale
Brookmere
CHILI
Riga
MONROE
Whites
Henrietta P.O.
Henrietta
PITTSFORD
PERINTON
Bushnell Basin
Egypt
Clifton
Severance
W. Henrietta
Henrietta P.O.
Scottsville
WHEATLAND
HENRIETTA
Cedar Swamp
Garbutt
Wheatland
Mumford
Oatka (Industry)
North Rush
RUSH
Mendon
Mendon Center
Rochester Jc.
LEHIGH
E. Rush
(Rush P.O.)
West Rush
Genesee Valley Jc.
Rush
MENDON
Honeoye Falls
NEW YORK
ORLEANS
GENESEE
LIVINGSTON
WAYNE
ONTARIO

MAP OF MONROE COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads; brown, canals

MONROE COUNTY

This county is located in the western part of the state, and is bordered on the north by Lake Ontario. It has an area of 424,320 acres. From north to south it extends approximately 25 miles, and from east to west 30 miles. The population is shown in the following table:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Rochester (city)*	248,465	Penfield	2,967
Brighton	2,974	Perinton	7,338
Chili	2,050	Pittsford	4,703
Clarkson	1,657	Riga	1,840
Gates	5,498	Rush	1,578
Greece	10,794	Sweden	4,635
Hamlin	2,458	Webster	4,389
Henrietta	2,083	Wheatland	2,314
Irondequoit	4,603		
Mendon	2,896	Total	319,310
Ogden	2,800		
Parma	3,268		

---

* Rochester is the county seat. This city now has a population of 295,700.

HISTORICAL ASSOCIATIONS

Monroe County was formed from Ontario and Genesee in 1821, and named for President Monroe. The region now comprising Monroe was traversed by the Indians on their hunting excursions, and was frequently visited by the French.

This county was contained in the Phelps and Gorham purchase. The three western towns belonged to the "triangle tract" and the remainder of the county west of the Genesee River was a portion of the celebrated "mill yard" tract.

The campaign of Sullivan into the heart of the Genesee country as far west as the Genesee River brought immediate fame to that section. There were many soldiers and officers in the army who were watching for a desirable locality in which to settle when their services in the field were ended, and they were quick to discover the attractions of central New York.

During the next five years settlements sprang up in various parts of the county, made largely by people from New England. Growth and development were greatly retarded by difficulty of access and fear of the Indians.

After the old "ridge road" was built in 1816 a daily stage line was put into operation, and until the construction of the Erie Canal all travelers through this section followed this then famous route. With the close of the War of 1812 came increased settlement; the Erie Canal gave an impetus to business, and progress then became rapid and continuous.

The village of Brockport was the scene of the early experiments by Cyrus McCormick in the manufacture of reapers.

DEVELOPMENT OF INDUSTRY

The early inhabitants devoted themselves to general agriculture and to the growing of wheat. The opening up of a market for the sale of ashes and black salts was a timely aid to the new settlements, as it brought many into the county and also promoted the clearing of land. When wheat became unprofitable by reason of western competition, the farmers ventured into stock raising and the cultivation of hemp and tobacco. Attention has since been turned to a diversity of crops, hay being produced in all the towns to some extent.

Grain and fruit are very generally produced, and, according to the 1918 census, the county leads in the production of wheat and in pears and plums. Fruit raising is especially prominent in the towns bordering Lake Ontario and others extending ten or twelve miles back from the lake. Monroe County stands second in potatoes raised, the towns of Henrietta, Rush, and Mendon leading in their production. Ogden and Chili raise large quantities of cabbage. Garden seeds are extensively produced in the town of Greece. The evaporated fruit business has become very important, especially in Webster and other large fruit-producing towns. With the growth of the city of Rochester and its consequent demands, market gardening and the production of milk have come to receive a large share of attention throughout the towns near the city. The Irondequoit section north of the city is one of the largest vegetable-producing sections in the state.

In the vicinity of Rochester are several extensive nurseries which produce both fruit and ornamental trees.

Monroe is one of the leading counties in raising swine, ranking second in the state.

Manufacturing is very important in the city of Rochester (p. 431).

CLIMATE AND RAINFALL

Records here given for Monroe County were taken at Rochester at an elevation of about 500 feet.

The average dates for the last killing frost in spring and the first in fall are April 30 and October 18, respectively, giving a growing season of 170 days.

The following tables, compiled from observations covering the period of 1872 to 1914, show both normal and extreme temperatures and precipitation. The snowfall data cover the period from 1885 to 1914.

RECORD OF TEMPERATURE AND PRECIPITATION AT ROCHESTER

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	24.7	71	1906	—14	1904	3.08	2.11	1878	19.8
February	23.5	70	1906	—12	1875	2.70	2.20	1900	20.5
March	31.6	86	1905	—7	1885*	2.98	2.98	1900	13.2
April	44.3	90	1885	11	1879	2.47	1.80	1886	5.3
May	56.8	93	1895*	27	1911	2.92	2.58	1893	0.3
June	66.1	95	1901*	36	1879	2.90	2.28	1872	......
July	70.9	101	1911	45	1898	3.12	3.57	1897	......
August	68.8	97	1893	43	1884	2.96	4.19	1893	......
September	62.7	98	1881	34	1896*	2.38	2.12	1911	......
October	50.8	87	1900*	19	1879	2.78	3.77	1873	0.4
November	38.8	75	1909	1	1875	2.57	2.26	1890	7.1
December	28.8	70	1875	—10	1884	2.79	2.20	1901	16.5
Year	47.3	101	1911	—14	1904	33.69	4.19	1893	83.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is generally level or slightly undulating, with a moderate inclination toward the lake. The shore of the lake is low except in the east and the extreme west, where it rises in bluffs ten to thirty feet in height. The surface gradually slopes upward to the lake ridge, 160 feet above the lake, and from five to eight miles south. From this ridge, the surface descends a few feet toward the south and then rises throughout a distance of one to three miles to the summit of the mountain ridge, which rises 310 feet above the lake. South of the mountain ridge the surface is gently rolling. The summits of the ridges along the southern border are about 400 feet above the lake. Baker Hill (928 ft.) in the southern part of Perinton, is the highest point in the county.

The principal stream is the Genesee River, which has a valley one-half mile to two miles wide, bordered by ridges thirty to sixty feet high. At Rochester the river flows over the solid limestone of the mountain ridge, forming the upper Genesee Falls; the lower Genesee Falls occur two and one-half miles further down. The principal tributaries of the Genesee are Allen and Black creeks from the west and Honeoye Creek from the east. The other principal streams of the county are Sandy and Salmon creeks west of the Genesee, and Irondequoit Creek east of that river, all flowing into Lake Ontario. The coast along Lake Ontario is indented by a number of small bays and ponds.

A large part of the county is covered with glacial drift deposits which generally assume the character of ridges and rounded hills. Tufa and marl are found in several localities. The soil is generally very fertile. Along the lake shore it consists of a red clayey loam derived principally from the disintegration of the Medina sandstone. In the center the soil is mixed with clay derived from the disintegration of the Clinton and Niagara shales. The soil in the southern part is mixed with lime and gypsum.

DESCRIPTION BY TOWNSHIPS

BRIGHTON: The surface is gently rolling, with a slight inclination toward the north. The deep valley of Irondequoit River is on the east border. The streams are small brooks, tributaries of the Genesee and Irondequoit. The soil is a sandy loam in the east and a silty loam on the river.

Products: Truck crops and fruit.

Average values of farm land range from $150 to $350 an acre.

CHILI: The surface is level or gently rolling, with a slight inclination to the east. The Genesee River forms the east border and Black Creek, a sluggish stream, flows east through the center. The soil is a silty loam mixed with sand.

Products: Potatoes, cabbage and grains.

Average values of farm land range from $50 to $150 an acre.

CLARKSON: The surface is level, with slight undulations in the south. It is drained to the northeast by the head branches of Salmon and West creeks. The soil is a sandy loam mixed with clay.

Products: Fruit, grain, potatoes and corn.

Average values of farm land range from $50 to $150 an acre.

GATES: The surface is undulating and slightly inclined toward the north. Small streams form the drainage of the town. The soil is a fine quality of calcareous loam intermixed with clay.

Products: Wheat, oats, barley, potatoes, and some fruit.

Average values of farm land range from $100 to $200 an acre.

GREECE: The surface is rolling, with a general inclination toward Lake Ontario. It is drained by several small streams flowing into the small bays that indent the lake shore. The soil is a silty loam with large tracts of drift sand along the lake shore.

Products: Fruit, especially apples, pears, peaches, plums and grapes; truck crops and general farm crops.

Average values of farm land range from $100 to $250 an acre.

HAMLIN: The surface is slightly rolling, inclining toward the lake. It is drained by a number of small streams, the principal of which are Sandy and West creeks. The soil is a sandy or silty loam.

Products: Fruit, especially apples and peaches, beans, wheat and oats, with some potatoes, barley and corn.

Average values of farm land range from $75 to $150 an acre.

HENRIETTA: The surface is rolling, and the Genesee River forms the western boundary. The streams within the town are generally small. The soil is a fertile, silty loam.

Products: Grain, potatoes, cabbage, and hay.

Average values of farm land range from $100 to $150 an acre.

IRONDEQUOIT: The surface is rolling, with an inclination in the north toward the lake and the deep valley of Irondequoit Bay on the east. The streams are small and flow north and east into the lake and bay. The soil in the north is sandy and in the south, silty loam. Truck farming is extensively carried on and a great amount of hothouse products are raised to supply the Rochester market.

Products: Fruit and truck crops.

Average values of farm land range from $150 to $500 an acre.

MENDON: The surface in the north and east is rolling, while in the southwest it is moderately hilly. Honeoye Creek flows through the southwest corner, and the headwaters of Irondequoit Creek through the eastern part. Mendon Pond lies in the northwestern part. The soil is a clayey, calcareous loam.

Products: Potatoes, cabbage and grain.

Average values of farm land range from $75 to $150 an acre.

OGDEN: The surface is level or gently undulating, with a slight inclination toward the north. The streams are small brooks. The soil is a fine quality of calcareous and clayey loam.

Products: Fruit, potatoes, cabbage, corn and other grains.

Average values of farm land range from $100 to $150 an acre.

PARMA: The surface is level in the north; in the south it is gently rolling, with a slight inclination toward the north. The streams are Salmon, Buttonwood and West creeks. The soil is principally a sandy or silty loam.

Products: Apples, pears, peaches, plums, wheat, oats, barley, potatoes, and beans.

Average values of farm land range from $150 to $250 an acre.

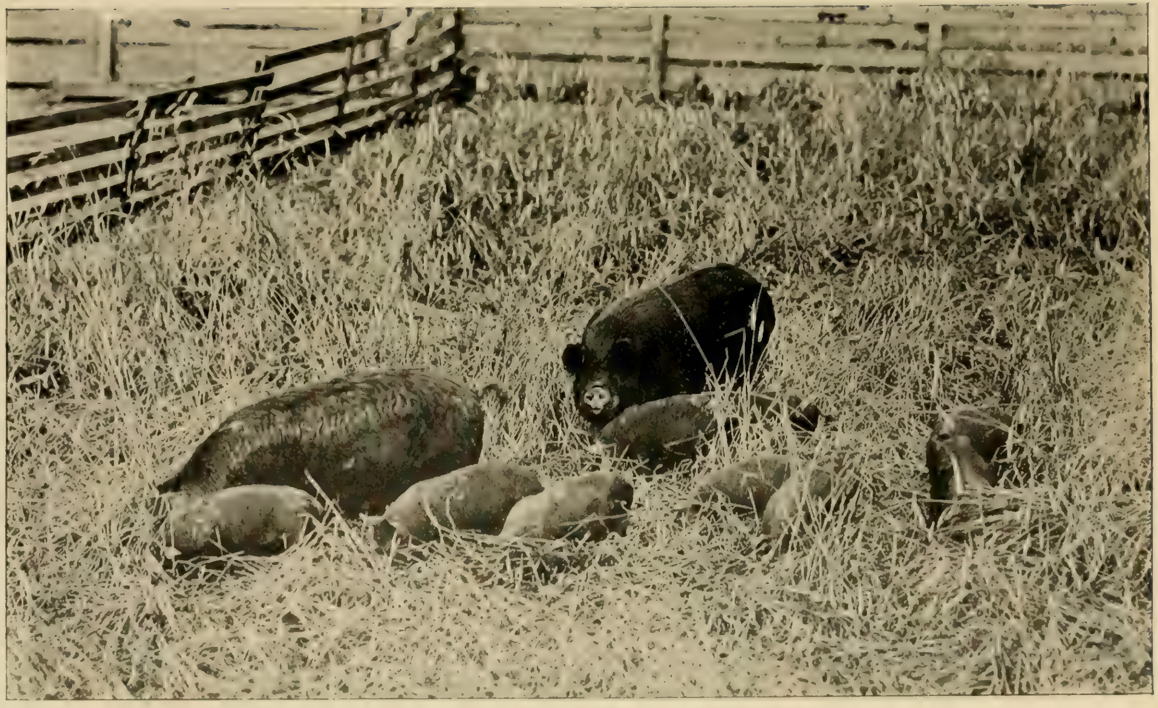


FIG. 96.— MONROE COUNTY STANDS SECOND IN NUMBER OF SWINE

PENFIELD: The surface is rolling, except in the west, where it is quite broken. Irondequoit River flows through the southwest corner and Irondequoit Bay forms a part of the western boundary. The soil is drift sand over clayey loam.

Products: Potatoes, cabbage, corn, grain, and some dairy products.

Average values of farm land range from $75 to $150 an acre.

PERINTON: The surface is uneven, an elevated portion from the south terminating near the center. Baker and Turk hills are the highest points in the county. The town is drained by the headwaters of Irondequoit Creek and its branches. The soil is a sandy and gravelly loam.

Products: Potatoes, grains, wheat, corn, some cabbage, and dairying.

Average values of farm land range from $100 to $150 an acre.

PITTSFORD: The surface is undulating, with a gentle inclination toward the north. Irondequoit Creek flows through the northeastern corner, and Allen's Creek through the northwest. In the north the soil is sandy, and in the south it is mixed with silt and gravel.

Products: Potatoes, cabbage, grains, and dairy products.

Average values of farm land range from $100 to $150 an acre.

RIGA: The surface is level or gently undulating. Black Creek, a dull sluggish stream, flows east through the center. The soil is a sandy and silty loam.

Products: Wheat, oats, barley, corn, potatoes, cabbage, beans, and alfalfa.

Average values of farm land range from $75 to $150 an acre.

RUSH: The surface is rolling, with a western inclination. Genesee River forms the western boundary. Honeoye Creek flows west through the town. The soil is a sandy, calcareous loam on the uplands and a rich alluvium on the the flats.

The State Agricultural and Industrial School is located within this town.

Products: Wheat, oats, potatoes, cabbage, barley, and hay.

Average values of farm land range from $100 to $150 an acre.

SWEDEN: The surface is level and gently rolling. A high ridge extends east and west through the town north of the center. The principal stream is Salmon Creek. The soil is silt and silty loam, mixed with sand.

Products: Fruit, beans, grains, and potatoes.

Average values of farm land range from $75 to $150 an acre.

WEBSTER: The surface inclines from the ridge in the southern part toward the lake. Bluffs 50 feet high at some points rise from the lake shore; in the western part on Irondequoit Bay they reach a height of from 80 to 100 feet. The streams are small and flow north into the lake. The soil north of the ridge is a sandy loam. In the south it is silt and silty loam.

Products: Fruit, grain, and potatoes.

Average values of farm land range from $100 to $250 an acre.

WHEATLAND: The surface is rolling. Allen's Creek flows east through the center of the town. The soil is loam mixed with clay in the interior; in some localities it is mixed with sand and gravel, the whole being underlaid with limestone.

Products: Potatoes, cabbage, grain, beans, and alfalfa.

Average values of farm land range from $75 to $150 an acre.

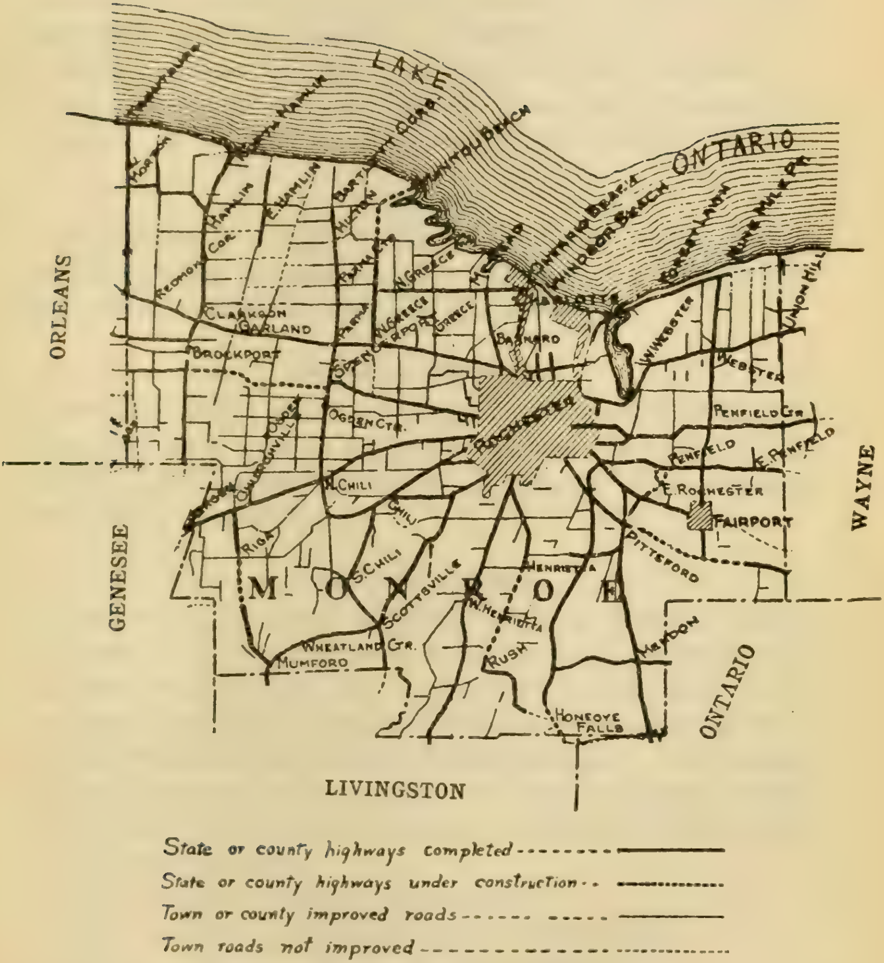
MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Several lines of the New York Central cross Monroe County, either passing through or making connections for the city of Rochester.

The Lehigh Valley, Erie, Pennsylvania, and Buffalo, Rochester and Pittsburgh also enter Rochester and make connections with points in all directions. The road last mentioned continues through Rochester to the northern boundary of the county.


LAKE ONTARIO
ORLEANS
GENESEE
WAYNE
ONTARIO
LIVINGSTON
MONROE
Norton
Hamlin
E. Hamlin
Redmon Cor.
Clarkson
Garland
Brockport
Parma
N. Greece
Greece
Spencerport
Ogden Ctr.
Churchville
Bergen
N. Chili
Chili
S. Chili
Riga
Scottsville
Wheatland Gr.
Mumford
Rochester
Barnard
Charlotte
Webster
Union Hill
Penfield Gr.
Penfield
E. Penfield
E. Rochester
Fairport
Pittsford
Henrietta
W. Henrietta
Rush
Mendon
Honeoye Falls
Manitou Beach
Ontario Beach
Windsor Beach
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Electric Roads

A number of electric roads cross the county and center at Rochester, one coming from Sodus Point, Wayne County; a second from Syracuse and Utica; a third from Geneva and Seneca Falls; a fourth from Mount Morris, Livingston County; and a fifth reaching Lockport and Buffalo.

Three additional electric lines run north from Rochester to points on the shore of Lake Ontario. From one of these points, Charlotte, a line follows the shore west to Manitou Beach.

Waterways

The county is crossed by the Barge Canal. Lake Ontario affords excellent shipping facilities and several steamship lines find a harbor within the limits of this county.

Improved Highways

Rochester is the center of a network of improved highways traversing every part of the county. There are in the county 306 miles of completed improved highways, 34 miles additional being under construction.

AVAILABLE MARKETS

Rochester is the great marketing center of Monroe County. For many years flour has been one of the most important of its manufactured products, but at the present time many other industries have become equally prominent. This city is famous for the products of the Eastman Kodak Company. Other manufactures include optical lenses, shoes, clothing, and steel products.

Practically all of the milk produced in Monroe County is sold in the city of Rochester.

A state hospital is located at Rochester.

There are fourteen canning factories in the county.

The agricultural organizations are as follows:

Caledonia Tri-County Fair Association.
Genesee Valley Poultry, Pigeon, and Pet Stock Association.
Granges: Pomona and nineteen subordinate granges.
Market Gardeners' Association of Monroe County.
Monroe County Agricultural Society.
Monroe County Beekeepers' Association.
Monroe County Dairymen's League.
Monroe County Farm Bureau Association.

Monroe County Sheep Breeders' Cooperative Association.
Rochester Industrial Exposition.
Rochester National Farm Loan Association.

EDUCATIONAL FACILITIES

Rochester is the seat of the University of Rochester, Rochester Thelogocial Seminary, and St. Bernard's Seminary. A state normal school is located at Brockport. At Spencerport there are given approved courses in agriculture and home making.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Churchville, East Rochester, Fairport, Hilton, Honeoye, Irondequoit, Rochester (3), Penfield, Pittsford, Scottsville, Spencerport, and Webster.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	385,296 acres
Number of farms	5,971
Per cent of farm land improved	89.3

LIVE STOCK PRODUCTS

Milk sold	2,543,202 gal.
Cream sold	12,994 gal.
Butter fat sold	359,539 lbs.
Butter produced	1,281,766 lbs.
Cheese produced	4,930 lbs.
Eggs produced	1,791,106 doz.
Wool produced	17,484 fleeces

LIVE STOCK AND POULTRY

Horses	20,639
Cattle	27,858
Sheep	30,700
Swine	21,786
Poultry	300,139

BEES

Number of colonies	2,724

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	19,584	779,032
Oats	39,300	1,385,560
Wheat	35,177	866,903
Barley	2,795	73,960
Buckwheat	614	11,631
Rye	5,392	101,586

	Acres	Yield
Hay and forage	68,969	97,959 tons
Special Crops:		
Potatoes	20,211	2,796,728 bu.
Vegetables, other than potatoes	9,491	....
Dry edible beans	16,044	241,502 bu.
Dry peas	60	1,279 bu.
Fruits:		
Apples	702,841 trees	2,592,378 bu.
Peaches and nectarines	339,375 trees	257,576 bu.
Pears	192,134 trees	117,044 bu.
Plums and prunes	92,986 trees	75,259 bu.
Cherries	49,831 trees	28,187 bu.
Quinces	30,121 trees	25,842 bu.
Grapes	188,477 vines	2,138,752 lbs.
Small fruits	1,283 acres	2,540,005 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	5,978	4,853

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	17,122	16,846
Cattle	24,509	25,810
Sheep	15,215	13,046
Swine	15,056	15,886
Poultry	276,133	244,354

BEES

	1917	1918
Number of colonies	1,918	2,084

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	12,167	13,062	197,852
Oats	30,185	32,107	1,242,982
Barley	2,982	5,992	120,755
Buckwheat	2,334	2,835	35,853
Wheat (winter)	39,771	42,562	845,500
Wheat (spring)	294	531	6,884
Rye	3,541	4,524	66,429

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	7,314	6,344	14,070 tons
Other hay	51,382	49,591	68,638 tons
Corn (ensilage)	5,494	4,388	25,545 tons
Corn (fodder)	....	2,890	....
Special Crops:			
Field beans	15,193	11,076	42,751 bu.
Cabbage	3,089	4,262	29,500 tons
Potatoes	14,920	16,305	1,546,098 bu.
Roots raised for stock food	....	1,190	....
Canning factory crops	1,911	2,457	....
Other vegetables and garden crops	3,130	2,974	....
Fruits:			
Apples	17,826	24,657	470,814 bu.
Peaches	8,507	9,653	602,738 bu.
Pears	3,701	4,356	368,145 bu.
Plums	847	930	835,393 lbs.
Cherries	1,443	1,624	895,070 lbs.
Quinces	....	431	8,203 bu.
Vineyard	752	771	783,978 lbs.
Small fruits	2,469	2,247	....

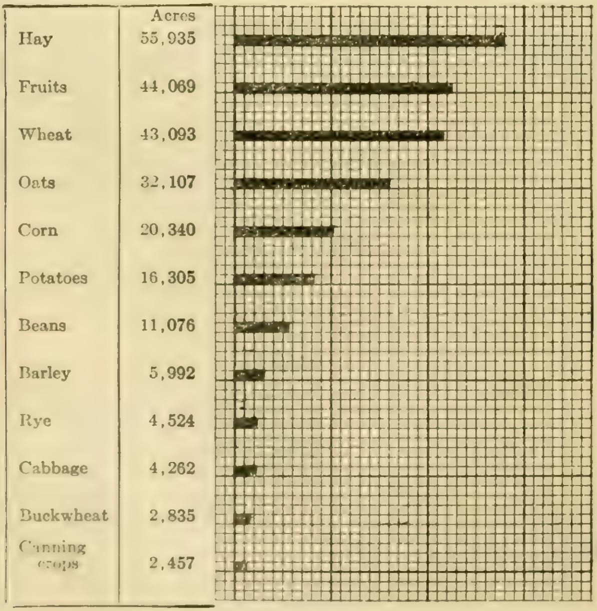
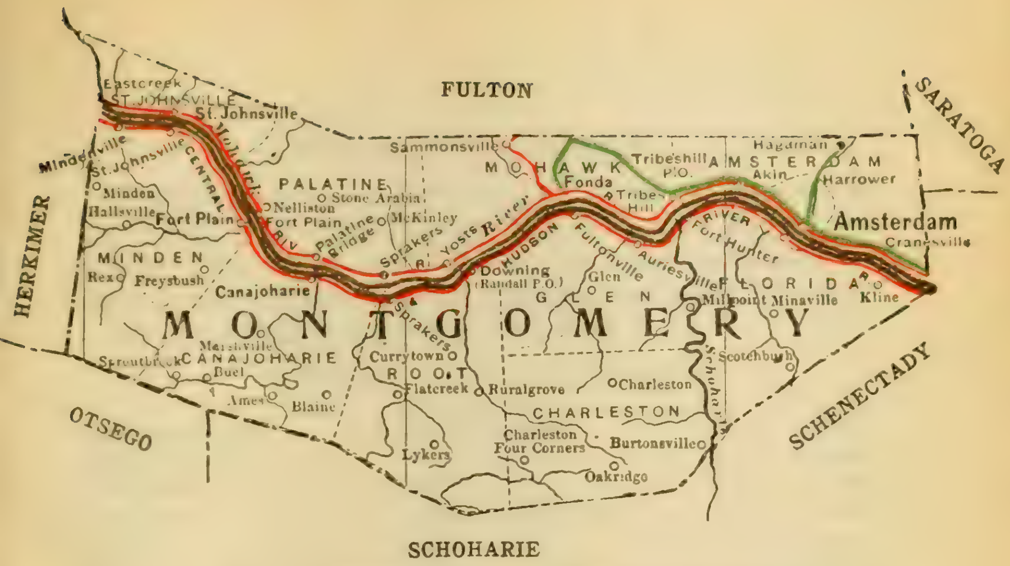
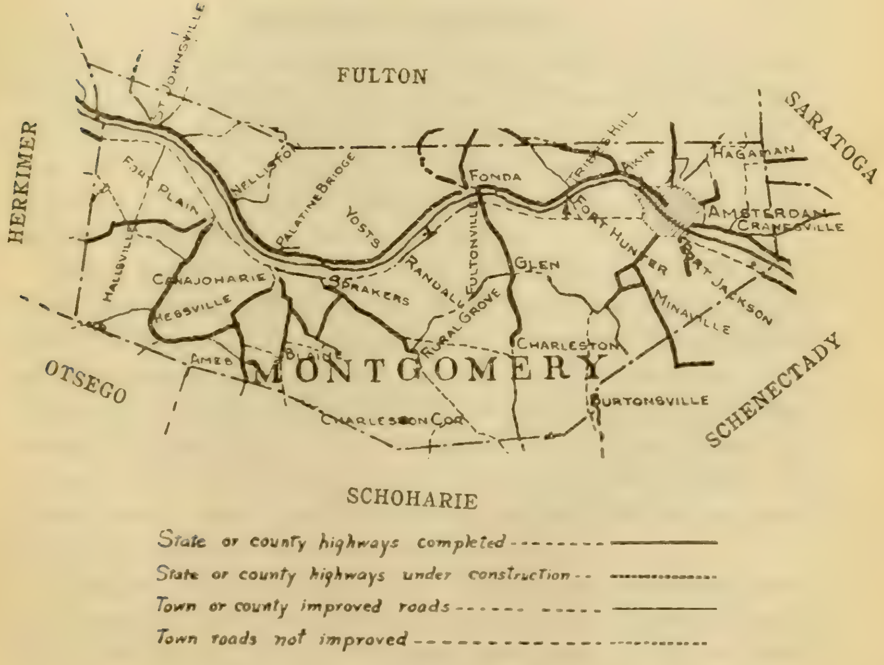


FIG. 97.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN MONROE COUNTY


FULTON
SARATOGA
HERKIMER
OTSEGO
SCHENECTADY
SCHOHARIE
MONTGOMERY
Eastcreek
ST. JOHNSVILLE
St. Johnsville
Mindenville
St. Johnsville
Minden
Hallsville
Fort Plain
MINDEN
Rex
Freysbush
Canajoharie
Marshville
Sprout brook
CANAJOHARIE
Buel
Ames
Blaine
PALATINE
Nelliston
Fort Plain
Stone Arabia
McKinley
Palatine Bridge
Sprakers
Yosts
CENTRAL
Mohawk
River
HUDSON
Sammonsville
MOHAWK
Fonda
Tribeshill P.O.
Tribes Hill
AMSTERDAM
Hagaman
Akin
Harrower
Amsterdam
Cranesville
Fort Hunter
Fultonville
Auriesville
Downing (Randall P.O.)
Glen
GLEN
Millpoint
Minaville
FLORIDA
Kline
Scotchbush
Schoharie
Currytown
ROOT
Flatcreek
Ruralgrove
Charleston
CHARLESTON
Charleston Four Corners
Burtonsville
Lykers
Oakridge

Map of Montgomery County, Showing Townships

Red, railroads; green, electric roads; brown, canals


FULTON
SARATOGA
HERKIMER
OTSEGO
SCHENECTADY
SCHOHARIE
MONTGOMERY
ST. JOHNSVILLE
FORT PLAIN
NELLISTON
PALATINE BRIDGE
YOSTS
HALLSVILLE
CANAJOHARIE
HESSVILLE
AMES
BLAINE
SPRAKERS
RANDALL
FONDA
TRIBES HILL
AKIN
HAGAMAN
AMSTERDAM
CRANESVILLE
FORT HUNTER
FORT JACKSON
FULTONVILLE
RURAL GROVE
GLEN
MINAVILLE
CHARLESTON
BURTONSVILLE
CHARLESTON COR.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

MONTGOMERY COUNTY

Montgomery County lies in the eastern part of the state in the valley of the Mohawk, centrally distant 39 miles from Albany. Its area is 254,720 acres; its extent from north to south is approximately 15 miles, and from east to west 33 miles.

The population is distributed as follows:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Amsterdam (city)	34, 319	Mohawk*	2, 575
Amsterdam	3, 375	Palatine	2, 449
Canajoharie	4, 023	Root	1, 327
Charleston	898	St. Johnsville	3, 458
Florida	1, 912		
Glen	2, 065	Total	61, 030
Minden	4, 629		

---

* Fonda, in the town of Mohawk, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Albany, March 12, 1772, under the name of " Tryon " County, in honor of the colonial governor. At that time it included Ontario, Herkimer, Otsego, Tioga, Hamilton, and Fulton. Twelve years later it was given the present name in honor of General Richard Montgomery, who fell in the attack on Quebec early in the Revolution.

When the whites first arrived in this section it was the principal seat of the Mohawks, one of the most powerful tribes of the Five Nations. The policy adopted by the early Dutch settlers of the county, and continued by their English successors, won the favor of a large majority of these savages, and the unprovoked attack of Champlain in 1609 led them to hate the French in Canada with intense bitterness. In the wars that ensued, the Five Nations proved faithful allies to the English, and on many occasions shielded them from hostile attacks.

A military post known as Fort Hunter was established near the mouth of Schoharie Creek in 1711. About the same time a large number of German Palatines sent over by Queen Anne settled along the Hudson. Shortly afterward these people removed to Schoharie and the Mohawk Valley and settled on lands given them by the government. At about the same period a considerable number of Holland Dutch from Schenectady and vicinity found their way into the county and extended their improvements up the valley.

The first land grants in this county were made as early as 1703. The principal ones, however, were made between 1730 and 1740.

Sir William Johnson, who was sent to manage his uncle's estate at the Junction of Schoharie Creek and the Mohawk River, was one of the early settlers. He was expected to clear the land and trade with the Indians. At times he lived with the natives and wore their dress. In appreciation of his methods of dealing with them, the Mohawks made him a chief and gave him a tract of land of nearly 70,000 acres. Later he purchased in addition several thousand acres from the Indians. He encouraged settlement and imported horses, cattle, sheep, and swine. Through his efforts a very considerable development of this section was made. At his death his son, Sir John, whose attitude toward the colonists was not entirely sympathetic, was given control of Indian affairs. Through his influence, together with that of other tories, and aided by Joseph Brandt, a distinguished Mohawk chief who had been educated by Sir William Johnson, the Indians were incited to active hostility during the Revolution.

The settlement of Canajoharie was almost entirely destroyed during one of the incursions led by Brandt.

After the close of the war the surviving colonists returned to their devastated homes and the processes of rebuilding progressed rapidly. Other settlers came in and either took possession of the confiscated lands of the tories, obtaining their title from the state, or ventured further and brought new farms into cultivation.

DEVELOPMENT OF INDUSTRY

Agriculture in Montgomery County was first carried on by the Indians, who raised corn, beans, squashes, and pumpkins in the neighborhood of their villages along the river. There were also a few Indian apple orchards on the uplands.

Fifty years ago wheat was largely produced in Montgomery County. Later it was gradually replaced by other crops, and hops became an important product. Much of the alluvial land was devoted to the raising of broom corn. All of these crops have nearly disappeared until within the last four years, when wheat has again been grown to some extent. Instead of shipping milk, butter and cheese were generally made; but at present milk and hay are the chief cash crops. Corn, oats, and buckwheat are largely grown and are used in the production of milk. Alfalfa is an important crop.

Several pure-bred herds, usually of Holstein stock, may be found in different parts of the county, especially in the townships of Canajoharie and Minden. Sheep raising occupies a less important position than formerly, although the business could be followed to advantage anywhere in the county.

The raising of beans is becoming an important line of farm work. With proper care and management fruit can be grown, some of the orchards being highly productive.

Two additional industries worthy of especial note in Montgomery County are the Beech-Nut Packing Company at Canajoharie, which employs over five hundred people, and the knit goods and carpet mills at Amsterdam, which are among the leading ones of their kind in the country.

CLIMATE AND RAINFALL

Climatological records for Montgomery County are taken from the Amsterdam station at an elevation of 610 feet. The present observer is Emery Elwood.

Average dates for the last killing frost in spring and the first in fall are May 1 and October 5, respectively, giving a growing season of 156 days.

The following table covers records extending from 1902 to 1918:

RECORDS OF TEMPERATURE AND PRECIPITATION AT AMSTERDAM

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	20.1	54	1916	—26	1904	2.73	1.34	1909	13.4
February	17.9	52	1918	—23	1914	2.71	2.95	1914	16.3
March	29.6	73	1905	—8	1912	3.20	1.90	1914	11.7
April	44.0	88	1915	14	1917*	2.55	2.05	1906	3.4
May	56.0	97	1911	24	1907	3.17	2.55	1906	T.
June	63.9	93	1907	33	1913	4.12	2.60	1917	......
July	70.0	100	1911	42	1913*	3.78	2.55	1915	......
August	67.8	98	1916	37	1912	3.63	3.43	1908	......
September	60.6	94	1913	26	1914	3.61	2.90	1916	T.
October	49.7	84	1910*	18	1904	3.44	4.00	1903	0.2
November	35.9	71	1914	5	1917	2.34	2.30	1913	4.6
December	21.2	62	1912	—30	1917	2.84	1.75	1905	13.9
Year	45.1	100	1911	—30	1917	37.61	4.00	1903	63.5

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

A general system of highlands forming the connecting link between the northern spurs of the Allegany Mountains on the south and the Adirondacks on the north extends through this county. The Mohawk River cuts through the upland and forms a valley one to two miles wide and 200 to 500 feet below the summits of the hills. The valleys of a number of the tributaries of the Mohawk extend several miles into the highland district. The hills bordering on the river generally rise in gradual slopes and from their summits the country spreads out into an undulating upland with a general inclination toward the river, into which the entire surface of the county is drained. Oak Ridge, in the southern part, is the highest point, with an elevation of 1,450 feet.

Gneiss is found in some localities, the principal place being at the "Noses" on the Mohawk. Calciferous sandstone appears, and limestone furnishes valuable quarries of building stone. Drift and boulders abound in various places. The soil along the river consists of alluvial deposits and a deep, rich vegetable mold. On the uplands it is mostly a highly productive clayey and silty loam, with small areas of gravelly loam interspersed.

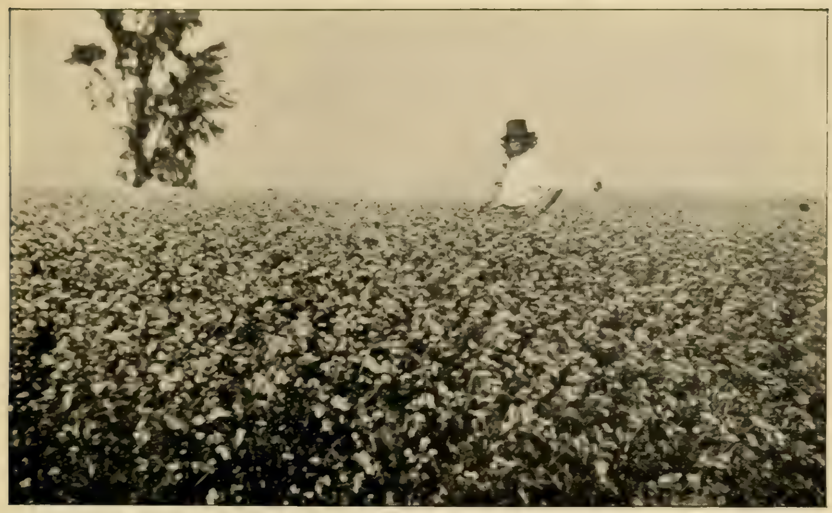


FIG. 98.—TEN-ACRE FIELD OF BUCKWHEAT, TOWN OF FLORIDA, MONTGOMERY COUNTY

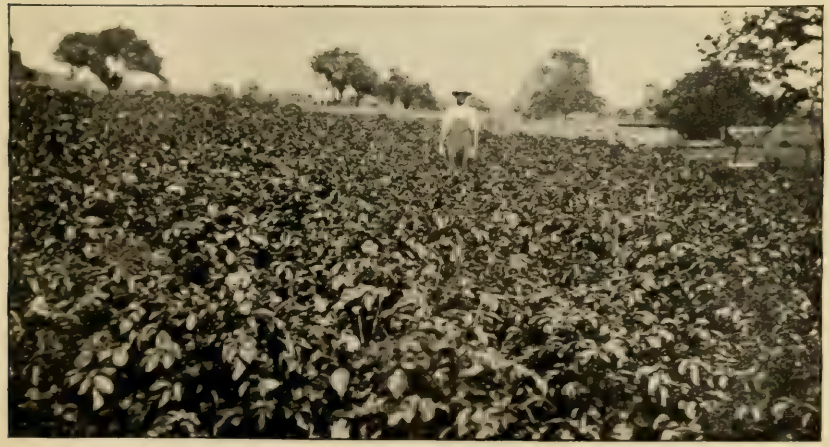


FIG. 99.—POTATO FIELD IN THE TOWN OF MINDEN, MONTGOMERY COUNTY

DESCRIPTION BY TOWNSHIPS

AMSTERDAM: Its surface consists of the intervale along the river and a rolling upland gradually rising over a space of two miles and attaining an elevation of 500 to 700 feet. The principal streams are Chuctanunda Creek and other tributaries to the Mohawk. The soil in the valley is a deep, rich alluvium and on the hills it is a fertile silt and fine sandy loam. Ledges of gray limestone lie along the bluffs on the margin of the river. Quantities of stone from this point were used in building the Capitol at Albany.

Products: Milk, hay, cabbages, potatoes, and garden products.

Average values of farm land range from $25 to $75 an acre.

CANAJOHARIE: The surface consists of the intervales of Canajoharie Creek and undulating uplands 200 to 600 feet above the valley. The soil is a clayey and silty loam, in some places mixed with gravel. This town received its name from the creek which crosses it. Near the mouth of Canajoharie Creek there is a hole resembling a large cistern over 20 feet in diameter and about 10 feet deep. This singular excavation, made by the action of the water and rolling stones, was called by the Indians Can-a-jo-ha-rie, meaning "the pot that washes itself." The village of Canajoharie is the seat of the well-known Beech-Nut Packing Company.

Products: Milk, hay, small fruits, grain, and potatoes.

Average values of farm land range from $25 to $75 an acre.

CHARLESTON: The surface is generally a rolling upland descending abruptly to the beds of the small streams, which flow in various directions. In the eastern part of the town the land bordering on Schoharie Creek consists chiefly of bluffs rising rapidly to an elevated upland, the highest points of which are 1,300 to 1,400 feet in height. The soil is generally loam intermixed with silt and particularly adapted to dairying and sheep raising.

Products: Hay, buckwheat, dairy products, oats, and corn.

Average values of farm land range from $5 to $50 an acre.

FLORIDA: The surface is generally a rolling upland 600 feet above the Mohawk on the north. The banks bordering the streams are usually steep. The principal stream is Chuctanunda Creek. The soil is productive; generally loam, mixed with silt.

Products: Milk, hay, potatoes, buckwheat, and fruit.

Average values of farm land range from $35 to $75 an acre.

GLENN: The surface is principally uplands about 600 to 900 feet high, descending abruptly to the narrow intervales along the streams. The highest point, in the southeast, reaches an elevation of 1,200 feet. The northern boundary is formed by the Mohawk River, and the eastern by Schoharie Creek. The soil is generally a productive clayey loam.

Products: Milk, hay, buckwheat, with some grain and apples.

Average values of farm land range from $10 to $60 an acre.

MINDEN: The surface is principally an undulating upland with steep slopes bordering the streams, the principal of which is the Otsquaga. The soil is a fine quality of gravelly and clayey loam. It is well adapted to grazing, although some parts are excellent for truck farming.

Products: Milk, hay, corn, oats and garden products.

Average values of farm land range from $30 to $100 an acre.

MOHAWK: The surface is uneven, gradually rising from the river to the northern line, where it reaches a height of about 700 feet. The principal streams are Cayadutta and Danoscara creeks. The soil is generally a good quality of fine, sandy loam.

Products: Milk, hay, truck crops and potatoes.

Average values of farm land range from $25 to $75 an acre.

PALATINE: The surface is mostly an upland 600 to 800 feet in elevation, broken by deep narrow rivers, and descending irregularly to the Mohawk. The soil is a fertile, clayey loam, well adapted to grazing.

Products: Milk and hay.

Average values of farm land range from $25 to $75 an acre.

ROOT: The surface is principally an undulating upland, the hills along the river rising abruptly to a height of 600 feet. The bold promontories below Sprakers on opposite sides of the river are known as the "Noses." The principal streams are tributaries of the Mohawk. The soil is a productive clayey or silty loam.

Products: Hay, beans, buckwheat and orchard crops.

Average values of farm land range from $15 to $75 an acre.

ST. JOHNSVILLE: The surface consists of a broken upland descending gradually to the south and terminating in the broad river flats. The soil is a fine quality of clayey and gravelly loam, well adapted to grazing and farming, and very productive along the river.

Products: Milk, alfalfa and corn.

Average values of farm land range from $40 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads and Waterways

Through the Mohawk Valley, which extends east and west the entire length of Montgomery County, run two lines of the New York Central Railroad, as does also the Barge Canal.

From Fonda, the Fonda, Johnstown and Gloversville Railroad extends northeast through Fulton County to Northville.

Electric Roads.

The Fonda, Johnstown and Gloversville electric road enters Montgomery County from Fulton County and extends east through Amsterdam to Schenectady. A branch of this road extends to Fonda and another to Hagaman.

Improved Highways.

From Amsterdam three improved highways lead to Schenectady. Two of these are direct routes and the third leads south through the eastern part of Montgomery County into Schenectady County and takes a general eastward direction to Schenectady.

From Amsterdam a state road extends west to Buffalo. With this road are connected three improved highways leading to Johnstown — one from Fonda, a second from Akin, and a third and less direct route from Amsterdam. From Fonda a section runs south to Charleston.

Two improved highways converge at each of three points in the Mohawk Valley — Sprakers, Canajoharie, and Fort Plain — these roads covering the south and southwestern portions of the county.

There are in Montgomery County 105 miles of completed improved highways with 9 miles additional under construction.

AVAILABLE MARKETS

Amsterdam is the principal local market within the county. This city is noted for its knitting mills and for the manufacture of carpets and rugs. Johnstown and Gloversville, manufacturing cities lying in Fulton County, furnish excellent markets for garden surplus and truck crops.

A large portion of the milk produced is sent to New York, Albany, and other cities by special milk trains.

About two-thirds of the milk produced is sent to New York, Amsterdam, Schenectady, Albany, and other cities by special milk trains. Manufactured dairy products include 1,000,000 pounds of cheese and more than 6,000,000 pounds of condensed and evaporated milk. Creamery butter is manufactured to some extent.

There is one canning factory in the county.

The agricultural organizations are as follows:

Canajoharie Milk Company, Inc.
Fort Dayton National Farm Loan Association.
Fort Plain Milk Co., Inc.
Fulton and Montgomery County Beekeepers' Association.
Granges: Pomona and thirteen subordinate granges.
Mohawk Valley National Farm Loan Association.
Montgomery County Agricultural Society.
Montgomery County Hay and Produce Cooperative Association, Inc.
Montgomery County Dairymen's League.
Montgomery County Farm Bureau Association.
Montgomery County Holstein-Friesian Breeders' Association.
Tribes Hill Creamery Co.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Amsterdam, Canajoharie, Fonda, Fort Plain, Fultonville, and Palatine Bridge.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	234,041 acres
Number of farms	2,189
Per cent of farm land improved	83.4

LIVE STOCK PRODUCTS

Milk sold	10,288,208 gal.
Cream sold	3,377 gal.
Butter fat sold	449,839 lbs.
Butter produced	236,592 lbs.
Cheese produced	950 lbs.
Eggs produced	916,984 doz.
Wool produced	1,685 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	7,639
Cattle	36,537
Sheep	3,902
Swine	9,098
Poultry	143,302

BEES

Number of colonies	3,615

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	10,003	398,357 bu.
Oats	25,507	726,120 bu.
Wheat	312	7,893 bu.
Barley	284	7,233 bu.
Buckwheat	5,470	133,434 bu.
Rye	486	8,967 bu.
Hay and forage	86,409	130,173 tons
Special Crops:		
Potatoes	2,007	193,644 bu.
Vegetables, other than potatoes	1,021	....
Dry edible beans	103	875 bu.
Dry peas	21	422 bu.
Fruits:		
Apples	77,804 trees	131,264 bu.
Peaches and nectarines	309 trees	226 bu.
Pears	5,159 trees	2,742 bu.

Plums and prunes	9,001 trees	4,411 bu.
Cherries	5,561 trees	1,447 bu.
Quinces	37 trees	4 bu.
Grapes	8,612 vines	81,787 lbs.
Small fruits	89 acres	117,489 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,120	2,000
LIVE STOCK AND POULTRY		
Horses and mules	6,760	6,257
Cattle	28,501	27,363
Sheep	1,678	1,350
Swine	6,114	3,938
Poultry	123,560	98,241
BEES		
Number of colonies	3,286	2,992

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	4,622	4,253	59,660 bu.
Oats	23,607	21,011	421,527 bu.
Barley	1,293	1,024	11,509 bu.
Buckwheat	5,393	4,718	37,071 bu.
Wheat (winter)	1,300	1,136	12,971 bu.
Wheat (spring)	198	256	3,070 bu.
Rye	313	223	2,391 bu.
Hay and Forage:			
Alfalfa	3,199	1,729	3,540 tons
Other hay	67,409	73,588	86,029 tons
Corn (ensilage)	7,044	6,565	34,658 tons
Corn (fodder)	....	888	....
Special Crops:			
Field beans	466	816	4,391 bu.
Cabbage	395	244	1,113 tons
Potatoes	1,690	2,011	110,628 bu.
Roots raised for stock food	....	208	....
Canning factory crops	41	33	....
Other vegetables and garden crops	615	610	....

	1917	1918	
Fruits:	Acres	Acres	Yield
Apples	2,390	2,705	54,690 bu.
Peaches	6	7	122 bu.
Pears	101	116	2,045 bu.
Plums	87	78	1,538 lbs.
Cherries	72	63	18,821 lbs.
Vineyard	42	46	53,575 lbs.
Small fruits	141	110	....

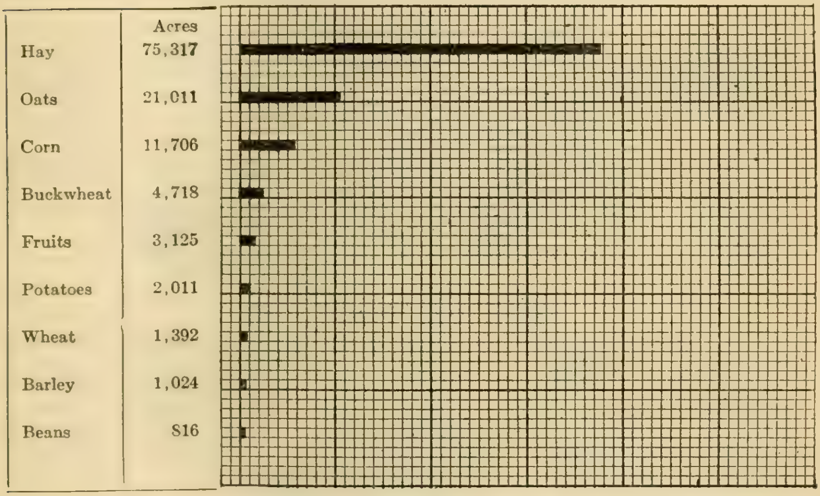


FIG. 100.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN MONTGOMERY COUNTY

NASSAU COUNTY

Nassau County lies near the west end of Long Island just east of the counties belonging to Greater New York. It has an area of 175,360 acres. From north to south it extends approximately 19 miles and from east to west 15 miles.

The population is shown in the following table:

Population by Towns

(Census of 1915)

Hempstead	63,271
North Hempstead*	23,687
Oyster Bay	29,867
Total	116,825

---

* Mineola, in the town of North Hempstead, is the county seat.

Note: The city of Glen Cove was incorporated in 1918.

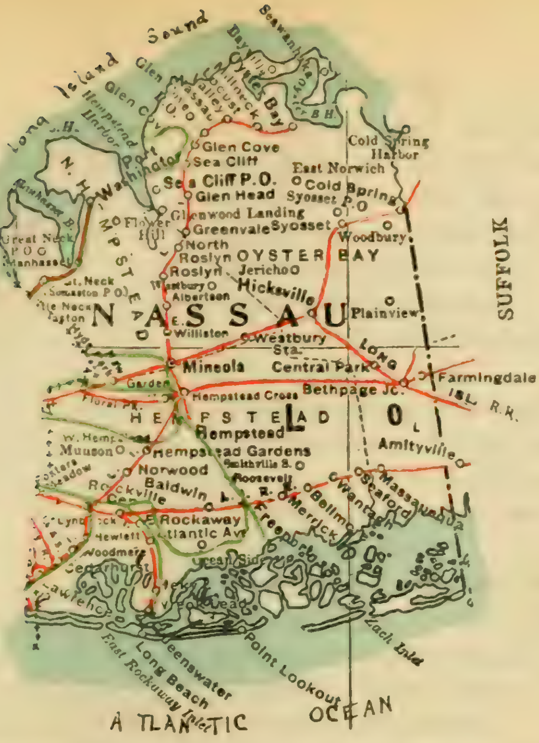
HISTORICAL ASSOCIATIONS

This county, which was originally included in Queens County, was erected in 1899 by the setting off of the three townships which form the present subdivisions of Nassau County — North Hempstead, Hempstead, and Oyster Bay. Its name was taken from that of the Dutch royal house at Nassau.

Nassau County was first settled by immigrants from Connecticut in 1643 in the present town of Hempstead. The land being under Dutch jurisdiction, the patent was obtained from Governor Kieft. The tract now known as the town of Oyster Bay was claimed by both the Dutch and the English, which gave rise to considerable trouble for the early settlers.

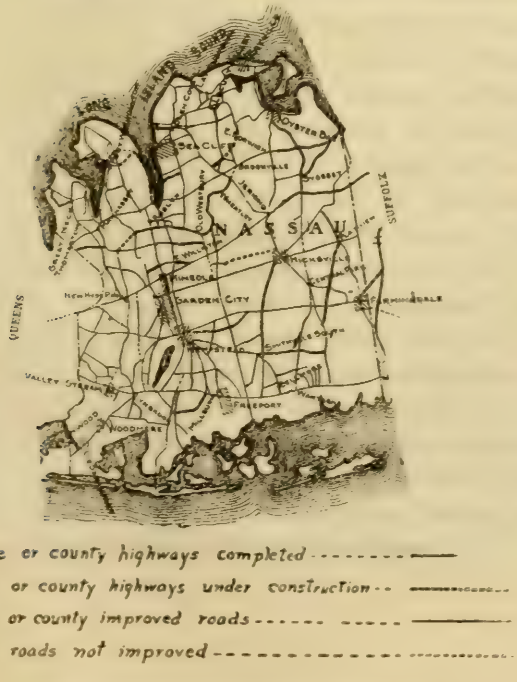
During the Revolution farmers were greatly annoyed by the impressment of livestock, hay, grain, wagons, and teams for the use of Howe's army, which was quartered on Long Island.

This county has been the home of several noted persons. Among these was Elias Hicks, the founder of the religious belief known as "Hicksite Quakers." Roslyn, in North Hempstead, was at one time the home of the poet Bryant. Oyster Bay is widely known as the home of the late ex-President Theodore Roosevelt.


Long Island Sound
NASSAU
OYSTER BAY
HEMPSTEAD
NORTH HEMPSTEAD
SUFFOLK
ATLANTIC OCEAN
Glen Cove
Sea Cliff
Sea Cliff P.O.
Glen Head
Glenwood Landing
Greenvale
Roslyn
Jericho
Hicksville
Syosset
Cold Spring Harbor
East Norwich
Woodbury
Plainview
Westbury Sta.
Williston
Albertson
Mineola
Central Park
Bethpage Jc.
Farmingdale
Long Isl. R.R.
Hempstead
Hempstead Gardens
Garden City
Floral Pk.
Great Neck
Manhasset
Port Washington
Flower Hill
Amityville
Massapequa
Seaford
Wantagh
Bellmore
Merrick
Freeport
Roosevelt
Baldwin
Rockville Centre
Norwood
E. Rockaway
Lynbrook
Hewlett
Woodmere
Cedarhurst
Lawrence
Oceanside
Island Park
Long Beach
Point Lookout
Zach Isld.
East Rockaway Inlet
Oyster Bay

Map of Nassau County, Showing Townships

Red, railroads; green, electric roads


Long Island Sound
NASSAU
QUEENS
SUFFOLK
Sea Cliff
Oyster Bay
Syosset
Hicksville
Mineola
Garden City
Hempstead
Farmingdale
Freeport
Valley Stream
Woodmere
Great Neck
New Hyde Park
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

DEVELOPMENT OF INDUSTRY

A neck of land between Manhasset Bay and Hempstead Harbor, formerly known as Cow Neck, was used by the original residents principally as a common pasture. For this purpose it was fenced off and the freeholders were permitted to pasture a number of sheep or cattle in proportion to the number of panels of the fence that they had respectively constructed. The production of milk for use in the city of Brooklyn later became an important part of the farmers' labor and income.

Even before the advent of white settlers, the waters along the north coast were noted for the excellence of their oysters and clams. At about the beginning of the nineteenth century artifical beds were first planted, and the business has since assumed vast proportions on both the north and south coasts.

The northern part of the county is well suited to the growth of trees, and was originally covered with forests. Prominent mention was made of apple trees and nurseries as early as 1670. The commercial growing of ornamental trees is now carried on extensively by Isaac Hicks and Sons, of Westbury.

Fifty years ago general farming was followed to a far greater extent than at the present time. In the northern part of the county dairying and sheep raising were most prominent, while in other sections grain was an important product. Finding that they could not successfully compete with upstate milk producers, the farmers gradually turned their attention to more profitable crops. The rapid growth of New York City necessitating a larger supply of truck crops, farmers responded by increasing their acreage in such produce; for, being close to market, they were able to raise perishable crops without danger or loss in transportation. As the acreage of truck crops increased, the Long Island Railroad developed, and special trains were run for market men and their teams. These rigs were transported to Long Island City and Brooklyn and were delivered from there to the various markets. When auto trucks came into use, transportation facilities were more easily solved, and at the present time nearly all farmers market their produce in their own trucks, generally using three-and-one-half ton or five-ton machines.

In Nassau County no crop rotation is followed. For about a mile along the southern border of North Hempstead the soil is very productive and is planted largely with potatoes year after year. About twenty-five years ago wealthy people who were attracted by the beauty of the north shore began building estates overlooking Long Island Sound, paying large prices for their property. As a consequence, the acreage of truck crops has materially decreased within the last two decades. At the same time, the effect of the decrease in acreage has been counterbalanced by intensive cultivation.

CLIMATE AND RAINFALL

No complete climatological records being available for Nassau County, Suffolk County records (page 697) may be considered as fairly representative.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

A range of hills extends from east to west near the center of the county. The north coast is deeply indented by inlets from the sound, the largest of which is Oyster Bay. South of the hills is a wide plain extending south to the salt marshes that surround the bays.

The soil on the north side is a productive sandy loam, in some places mixed with clay. The plains have a coarse sandy soil, which is rendered productive with proper application of fertilizer. Along the borders of the salt meadows is a strip of light, sandy soil, easily cultivated, and of moderate fertility.

DESCRIPTION BY TOWNSHIPS

Hempstead: The shore is bordered by a line of beaches and sand hills, including the beaches of Rockaway, Far Rockaway, and Long Beach. Wide salt meadows border on the bays and from them the land spreads out into a level plain. The soil along the borders of the marshes is moderately fertile; on the plain it consists of sand and fine gravel, which, when fertilizers are properly applied, may be made productive. Franklin Square and Valley Stream are in the center of truck regions from which

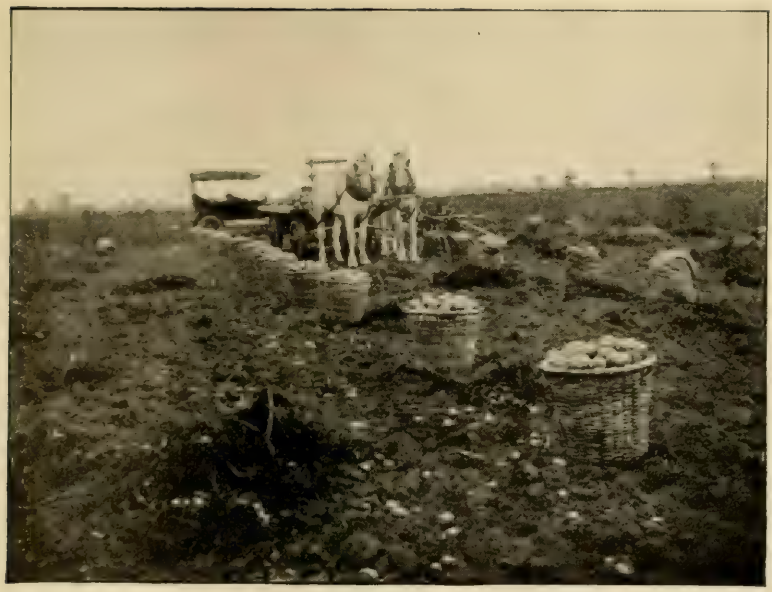


Fig. 101.— Potatoes on Farm of John Gasser, Hicksville, Nassau County

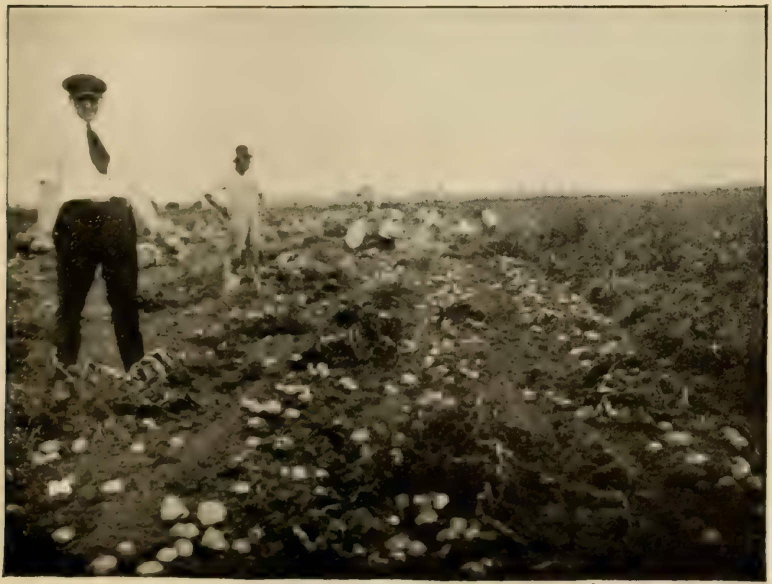


Fig. 102.— Potatoes Yielding 382 Bushels per Acre Near Hicksville, Nassau County

are marketed all kinds of vegetable crops. Intensive farming is practiced, the farmers usually harvesting two crops and sometimes three per season.

The eastern part of the township, extending from Hempstead toward Hicksville and south to Roosevelt and Jerusalem, is known as Hempstead Plains. The main crops in this section are potatoes, sweet corn, cabbage, and hard corn, potatoes yielding generous returns.

Average values of farm land range from $400 to $600 per acre in the Hempstead Plains, and $1,500 per acre near Franklin Square and Valley Stream.

NORTH HEMPSTEAD: A ridge of hills extends across the town from east to west, dividing it into two nearly equal parts. The elevation known as Harbor Hill, on the east side, is one of the highest points on Long Island, reaching a height of about 390 feet. The soil is mostly a yellow loam overlying thick deposits of sand and gravel. It is especially adapted to the growth of fruit trees, particularly in the northern part. The land is easy to work, although the mold is not of sufficient depth and richness to produce profitable crops without the constant and extensive use of fertilizers. Much of the land is now taken up by large estates. In the southern part is a very productive soil that is planted largely with potatoes year after year. Several farmers have more than 100 acres devoted to this crop. Sweet corn is also an important product.

Average values of farm land range from $500 to $600 an acre.

OYSTER BAY: A range of hills extends through the northern part; the remainder of the surface is level. The soil is a sandy and clayey loam, sand predominating, and induces quick and rapid growth. Manures are necessary, however, to produce profitable crops.

Two well-known business concerns are located within this town, one of them being the Duryea Starch Factory, at Glen Cove, and the other being the Fulton Motor Truck Company, at Farmingdale. Farmingdale is also the location of a state agricultural school.

Products: Potatoes, sweet corn, cabbage, hard corn and pickles.

Average values of farm land range from $400 to $500 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The Long Island Railroad, a portion of which is electrically operated, has numerous lines running through various parts of the county. An electric road connects Mineola, Hempstead, and Freeport, sending branches from each of these three places to the west side of the county. Short sections extend to the coast from Freeport on the south and from Glen Cove on the north.

Improved Highways

There are several short sections of improved highways in the county. A road leading south from Oyster Bay connects with an improved highway leading to many of the larger places in Suffolk County.

There are in Nassau County approximately 57 miles of completed improved highways with 16 miles additional under construction.

AVAILABLE MARKETS

The principal market for products of Nassau County is, as previously stated, the city of New York and its suburbs. The summer resorts along the coast also have extensive requirements.

The agricultural organizations of Nassau County are as follows:

Agricultural Society of Queens-Nassau Counties.
Floral Park Cooperative Association, Inc.
Glen Head Cooperative Association, Inc.
Granges: One subordinate grange.
Long Island Farmers' Club.
Nassau County Farm Bureau Association.
Nassau County Horticultural Society.
Nassau County Potato Growers' Association.
Oyster Bay Horticultural Society.
Valley Stream Farmers' Cooperative Association, Inc.

EDUCATIONAL FACILITIES

A state school of agriculture is located at Farmingdale.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Baldwin, Farmingdale, Freeport, Glen Cove, Great Neck, Hempstead, Hicksville, Lawrence, Lynbrook, Manhasset, Mineola, Oyster Bay, Port Washington, Roslyn, Sea Cliff, Rockville Center, Westbury, and Woodmere.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	57,770 acres
Number of farms	1,017
Per cent of farm land improved	76.9

LIVE STOCK PRODUCTS

Milk sold	619,585 gal.
Cream sold	770 gal.
Butter produced	52,708 lbs.
Cheese produced	50 lbs.
Eggs produced	318,838 doz.
Wool produced	182 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	3,860
Cattle	3,351
Sheep	591
Swine	2,698
Poultry	76,618

BEES

Number of colonies	207

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	5,595	336,173
Oats	205	4,361
Wheat	341	7,702
Barley	1	18
Buckwheat	49	1,054
Rye	662	12,280

	Acres	Yield
Hay and forage	6, 624	10, 789 tons
Special Crops:		
Potatoes	8, 685	1, 168, 369 bu.
Vegetables, other than potatoes	10, 472	....
Dry edible beans	7	98 bu.
Dry peas	1	3 bu.
Fruits:		
Apples	10, 140 trees	15, 403 bu.
Peaches and nectarines	4, 015 trees	2, 201 bu.
Pears	3, 491 trees	4, 746 bu.
Plums and prunes	216 trees	72 bu.
Cherries	487 trees	287 bu.
Quinces	174 trees	128 bu.
Grapes	1, 139 vines	18, 275 lbs.
Small fruits	149 acres	267, 726 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1, 232	972

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	3, 144	2, 358
Cattle	2, 677	2, 750
Sheep	891	1, 148
Swine	1, 315	1, 574
Poultry	92, 420	64, 021

BEES

	1917	1918
Number of colonies	256	278

SELECTED CROPS

Cereals:	1917 Acres	1918 Acres	1918 Bushel
Corn	4, 384	4, 871	172, 594
Oats	371	473	6, 364
Barley	18	14	55
Buckwheat	60	74	780
Wheat (winter)	364	372	5, 513
Wheat (spring)	17	74	746
Rye	524	645	7, 936

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	258	243	618 tons
Other hay	5,048	4,257	5,433 tons
Corn (ensilage)	391	460	3,150 tons
Corn (fodder)	....	546	....
Special Crops:			
Field beans	224	547	9,311 bu.
Cabbage	2,034	2,510	21,717 tons
Potatoes	8,581	11,036	875,279 bu.
Roots raised for stock food	....	645	....
Canning factory crops	399	451	....
Other vegetables and garden crops	3,154	3,732	....
Fruits:			
Apples	608	566	9,321 bu.
Peaches	185	132	3,135 bu.
Pears	59	20	2,173 bu.
Plums	14	34	247 lbs.
Cherries	17	9	580 lbs.
Quinces	....	3	173 bu.
Vineyard	8	2	2,096 lbs.
Small fruits	373	170	....

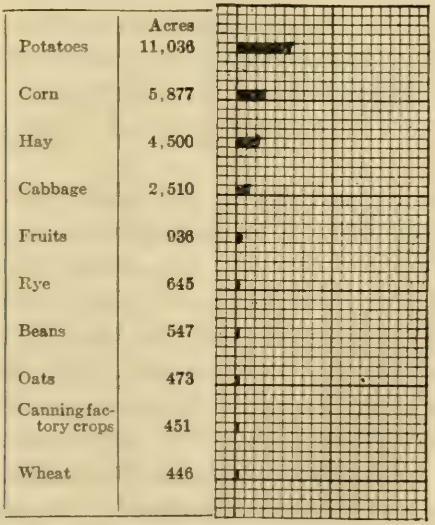


FIG. 103.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN NASSAU COUNTY

NEW YORK COUNTY

This county is located on Manhattan Island in the southeastern part of the state. Erected in 1683, it is still confined to the original limits, and, with the counties of Kings, Queens, Richmond, and Bronx, forms the city of Greater New York.

As the Dutch traders of early years had no interest in the newly discovered land other than the pursuit of profitable business, no cabins were built in the state until November, 1613, when one of the two ships owned by Adrian Block suddenly caught fire and was burned with its cargo of furs off the lower end of Manhattan Island. Block then sent half of his men home while he and the others remained for the winter, building log cabins for shelter. During the winter they built a boat on the beach, the first of the many thousands built in New York.

The English governor Sir Edmund Andrus passed the first of a series of laws known as the "Bolting Acts." On the plea of preventing bad grain or flour from being exported and thus ruin the grain trade, which was beginning to rival the fur trade, he decreed first that all flour for export must be inspected at New York and later that it must be bolted there. This monopoly led to a rapid growth of the little settlement and resulted in the first real estate boom of the New World. At about 1700 this city was noted as being the center of the privateering operations.

Just previous to and during the Revolutionary War, New York City was the scene of many important and stirring events, among which were the following: the meeting of the first Colonial Congress, 1765; first resistance to the Stamp Act, 1765; Battle of Golden Hill, 1770, where the first blood of the Revolution was shed, preceding the more famous Boston Massacre by six weeks; meeting of the Provincial Congress, the first independent legislative body in New York, 1775; and the occupation by the British Army, 1776–1783. After the Revolution, in 1784, our state legislature was once more stationed in its original home in New York City, where it continued to meet until removed to Albany, 1797. The inauguration of George Washington as President took place in New York City, in 1789.

EDUCATIONAL FACILITIES

The city of New York is famous for its excellent educational facilities.

Among the well-known institutions for higher education are the following: College of the City of New York, Columbia University, Fordham University, Manhattan College, New York University, St. Francis College, St. John's College, St. Joseph's Seminary and College, Adelphi College, College of Mount St. Vincent, College of the Sacred Heart, and Hunter College.

NIAGARA COUNTY

Niagara County lies in the northwestern extremity of the state, Lake Ontario forming its northern boundary and the Niagara River on the west. It has an area of 334,080 acres. Its average extent from north to south is approximately 18 miles; from east to west it averages 28 miles. The population is distributed as follows:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Lockport (city)*	18,693	Pendleton	1,323
Niagara Falls (city)	42,257	Porter	2,504
North Tonawanda (city)	13,498	Royalton	5,006
Cambria	1,892	Somerset	2,420
Hartland	2,783	Wheatfield	1,936
Lewiston	3,276	Wilson	3,216
Lockport	2,077		
Newfane	4,537	Total	108,550
Niagara	2,738		

---

* Lockport is the county seat.

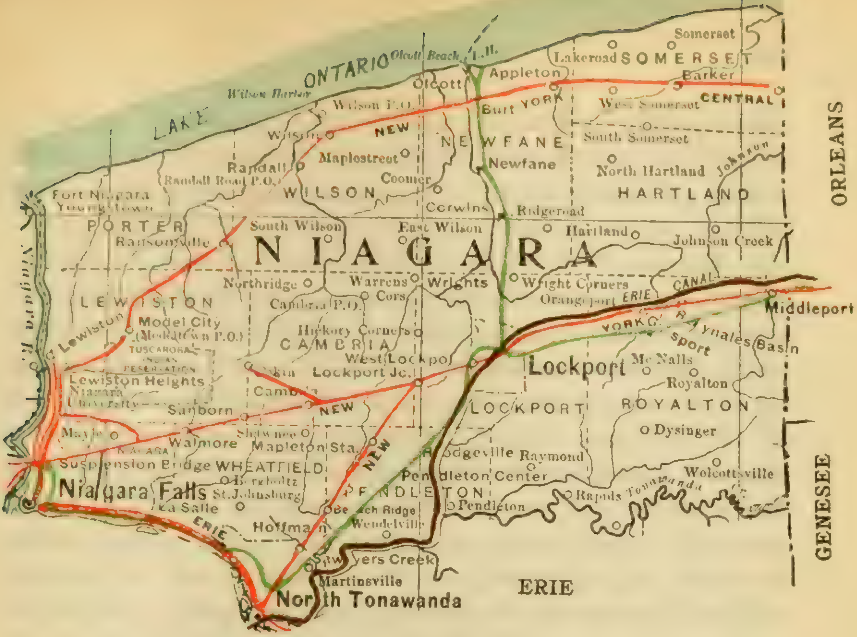
NOTE.— Lockport now has a population of 21,000; Niagara Falls, 50,700; North Tonawanda, 15,400.

HISTORICAL ASSOCIATIONS

This county was formed from Genesee in 1808; in 1821 Erie County was taken off. The name comes from the Iroquois word " O'hniaga," which means "a bisected bottom-land."

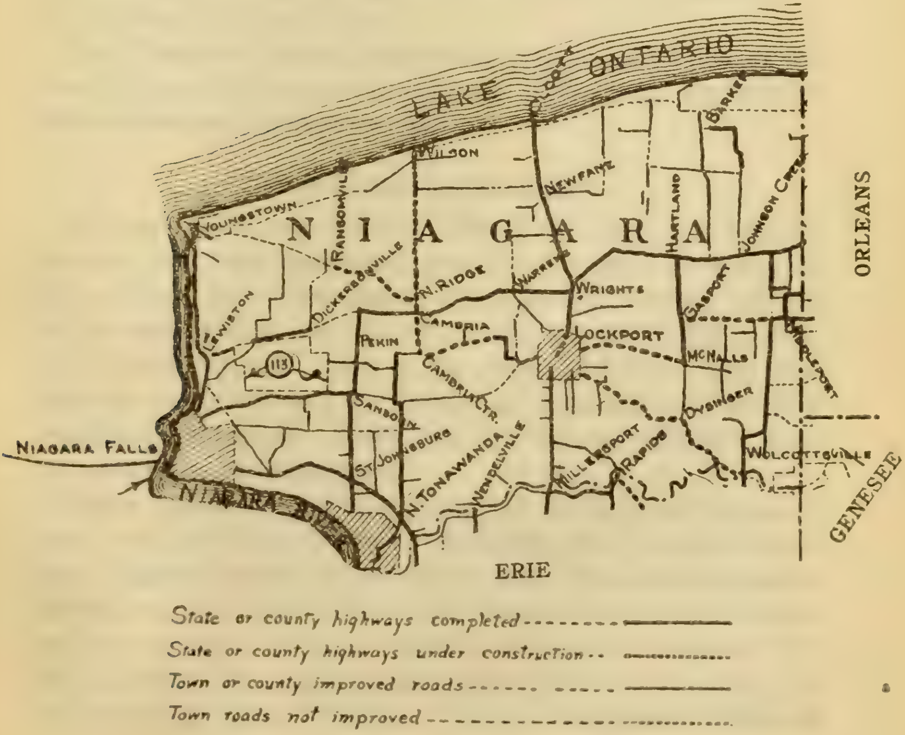
The section included in Niagara County was a portion of the domain of the Seneca Indians, though none of their principal villages were within its limits. At Lewiston was a portage used by the natives at a very early day. When the French occupied the county this portage came into regular use, heavy articles being moved up and down the mountain by means of a rude railway.

The French, who were the first white men to visit this region, built small forts at Niagara and La Salle. During the war of 1612 these forts were taken by the British, who remained in control until 1796. During that war also, the villages of Lewiston and Niagara Falls were burned, the inhabitants fortunate enough to escape fleeing by way of the ridge road.


LAKE ONTARIO
NIAGARA
ORLEANS
GENESEE
ERIE
PORTER
LEWISTON
WILSON
NEWFANE
SOMERSET
HARTLAND
CAMBRIA
LOCKPORT
ROYALTON
WHEATFIELD
PENDLETON
Lockport
Niagara Falls
North Tonawanda
Middleport
Olcott
Appleton
Barker
Somerset
Wilson
Randall
Youngstown
Ransomville
Lewiston
Sanborn
Suspension Bridge
La Salle
Hoffman
Martinsville
Sawyers Creek
Gasport
Dysinger
Wolcottsville
Royalton
Wrights
Warrens Cors
North Hartland
Johnson Creek
Newfane
Burt
Niagara R.
NEW YORK CENTRAL
ERIE CANAL

Map of Niagara County, Showing Townships

Red, railroads; green, electric roads; brown, canals


LAKE ONTARIO
NIAGARA
ORLEANS
GENESEE
ERIE
NIAGARA FALLS
NIAGARA RIVER
YOUNGSTOWN
LEWISTON
RANSOMVILLE
DICKERSONVILLE
N. RIDGE
WILSON
NEWFANE
HARTLAND
BARKER
JOHNSON CREEK
WARRENS
WRIGHTS
CAMBRIA
PEKIN
CAMBRIA CTR.
LOCKPORT
GASPORT
MCNALLS
MIDDLEPORT
DYSINGER
WOLCOTTSVILLE
SANBORN
ST. JOHNSBURG
N. TONAWANDA
WENDELVILLE
MILLERSPORT
RAPIDS
113
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

During the early years of the Revolution, Colonel John Butler, who commanded the English and Tories at Niagara, made La Salle the headquarters of his famous marauding parties.

The land in this county was all included in the Holland purchase, except the small reservations of the Tonawanda and Tuscarora Indians and a strip one mile in width along Niagara River reserved by the state for the purposes of a portage road around Niagara Falls. The first settlements were made about the beginning of the nineteenth century and the growth of the whole country was rapid, especially after the completion of the Erie Canal in 1825 and the subsequent construction of railroads.

In 1837 there was great excitement connected with the so-called Patriot War. The American sympathizers, who were collected on Navy Island, a British possession just above the rapids, were transported from Schlosser on the steamer Caroline. On the night of December 29, a British force cut the steamboat from her moorings, set her on fire, and floated her over the falls. A diplomatic controversy followed, seriously hindering progress in the county for some time.

The Tuscarora Indian Reservation occupies a portion of the western part of the county and the Tonawanda Reservation extends into the southeastern part.

DEVELOPMENT OF INDUSTRY

Although grain was produced abundantly from the first, no markets were then established at which it could be converted into money. As a consequence, many of the pioneers resorted to the manufacture and sale of potash, which brought money into the country, and aided in the clearing of land. The construction of sawmills and the business of lumbering also occupied considerable attention. Additional revenue was obtained from the production of cranberries.

Apples and peaches were the principal fruits grown for many years, and in the time of Queen Elizabeth fruit was sent direct from Niagara County for her family use. The largest orchards planted in early times were on the Niagara River below Lewiston, on the shore of Lake Ontario, and about Lockport. Of these, probably the largest orchard planted was set out in 1817 — an orchard of about 700 trees — within the present limits of

Lockport. Some of the orchards set about 100 years ago are still thrifty and productive. The large, vigorous trees have trunks two and a half to three feet in diameter, with a limb expanse of sixty to seventy feet. The capacity of these old trees runs between sixteen and twenty-one barrels. One of these original orchards, composed of about seventy Greening trees, averaged sixteen barrels of apples to the tree in 1912.

About 1845 there began to be a demand for winter apples in the then newly-settled states of the West, which stimulated the growers to graft their almost worthless varieties with those then in demand for shipping. A rapid increase of apple growing at once began. Up to the present time Niagara has led all other counties of the state in intensive management of its orchards. Probably no section of the country is giving more attention to the apple and peach orchards in the form of cultivating, pruning, and spraying than is the Ontario plain of Niagara County.

Next to the apple, the peach is grown more extensively than any other fruit, many considering it their most profitable crop. Pears, quinces, plums, grapes, and other fruits are also grown extensively, the census of 1918 placing Niagara at the head in the production of peaches, quinces, and cherries, and second in the production of pears. The area bordering the lake is devoted largely to peaches. Just back of this section is one that, besides producing quantities of peaches, has also many young plantings of apples throughout the length of the zone. The eastern and western thirds of the lake front, having larger areas of clay loam soils, are adapted to growing a larger number of pears, plums, and prunes. A little further south, three miles from the escarpment, is a gravelly, sandy ridge — a deposit, or bar, made in pre-historic time. The farms along this ridge are usually small and devoted to mixed fruit growing with gardening a close second in important operations. Cherries, both sour and sweet, thrive exceptionally well on the ridge. Between the ridge and the escarpment, an area about three miles in width, farmers engage in fruit growing and general agriculture. Along the escarpment and immediately below the bluff, apples, pears, plums, cherries, and quinces are special crops. Here too, is the grape-producing section of the county.

While fruit growing is the most prominent industry, the raising of hay, grain, potatoes, and beans is of considerable importance, more especially in the southern half. This section, being generally level and not well drained, is devoted largely to general farming, with some good orchards on the high portions.

The Niagara grape was originated in Lockport, 1872, on the grounds of the Odd Fellows' Home, and the original vine is still growing just east of the building. The Niagara peach and the Pomeroy English walnut were also originated within the county.

Manufacturing is of great importance in Lockport, Niagara Falls, and Tonawanda.

CLIMATE AND RAINFALL

Climatological records for Niagara County are taken from the station at Appleton, which lies at an elevation of 300 feet above sea level. The present observer is H. A. Van Wagoner.

The average dates for the last killing frost in spring and the first in fall are May 4 and October 14, respectively, giving a growing season of 163 days.

The following table, compiled from observations covering the period 1899 to 1917, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT APPLETON

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	26.2	70	1906	—13	1904	2.43	2.10	1902	11.3
February	23.3	69	1906	—12	1914*	1.82	1.52	1900	11.2
March	32.5	79	1903	—7	1897	2.10	1.40	1913	7.1
April	43.8	84	1899	16	1892	2.25	2.13	1901	1.6
May	54.9	95	1911	26	1902	2.86	2.05	1896	0.4
June	64.5	95	1901	32	1891	2.45	2.00	1892	......
July	69.8	106	1911	40	1912	3.51	4.21	1902	......
August	67.4	97	1911*	41	1895	2.90	3.46	1893	......
September	61.8	96	1900	31	1890	2.84	2.03	1899	......
October	50.3	88	1900	19	1889	2.87	2.00	1912	0.1
November	39.7	72	1891	12	1891	2.54	2.37	1890	3.1
December	29.9	67	1906	—5	1910	2.34	2.37	1893	8.3
Year	47.0	106	1911	—13	1904	30.91	4.21	1902	43.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is generally level or gently undulating and is divided into two distinct parts or terraces by a ridge extending east and west. The lake shore is a bluff ten to thirty feet high, composed of sharp sand or other heavier soils, from the summit of which the lower terrace slopes gradually upward to the foot of an elevation known as the mountain escarpment, where it attains a height of 100 to 150 feet above the lake. This escarpment extends east and west through the northern part of the towns of Royalton and Lockport, and near the center of Cambria and Lewiston. In the eastern part of the county the ridge has an elevation of 80 to 100 feet, gradually rising in the west to an elevation of 150 feet above the lower terrace. Running east and west about three miles from the escarpment is a gravelly and sandy ridge with two short spurs some ten to twenty feet above the gradual northern decline of the Ontario plain. The southern half of the county is quite level. It descends slightly toward the south, and terminates in Tonawanda Creek, which forms the greater part of the southern boundary of the county.

The principal streams in the county are the Twelvemile, Eighteenmile, Fish, Bergholtz, Bull, Sawyers, Golden Hill, and Johnson creeks, all emptying into Lake Ontario; and Mud Creek, a tributary of Tonawanda Creek on the southern border. The streams that flow north have worn deep ravines in the drift deposits, and they are frequently interrupted by slight falls.

Nearly the entire surface is covered with deep deposits of drift, rocks appearing only on top and sides of the mountain ridge and the ravines of the streams. Niagara limestone furnishes an excellent building material and a good quality of lime, the principal quarries being situated in the vicinity of Lockport and Pekin. To the Niagara limestone we are indebted for the falls of Niagara, as its great solidity and thickness protects the shale beneath, which, being worn away, leaves the projecting stretch of limestone to form the edge of the first precipice over which the cataract pours.

A strip of land extending from the summit of the mountain ridge about two miles to the south is covered with a sandy loam, and the remainder of the upper terrace is clayey, largely inter-

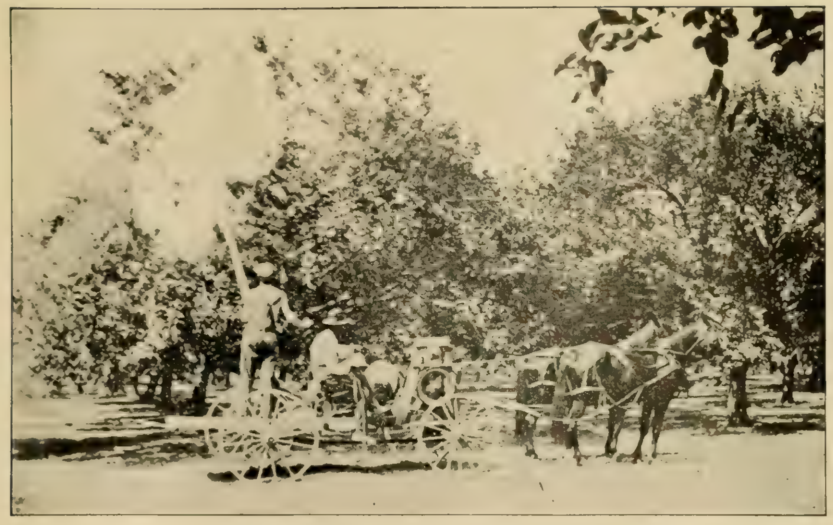


FIG. 104.— DUSTING APPLE TREES IN NIAGARA COUNTY
(Courtesy of Niagara Sprayer Company)

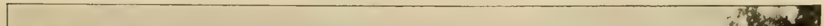


FIG. 105.— DUSTING PEACH TREES IN NIAGARA COUNTY
(Courtesy of Niagara Sprayer Company)

mixed with silt along the southern border. The soil between the mountain and lake ridges is a clayey loam; along the lake ridge and north of it there is a sandy and gravelly loam.

DESCRIPTION BY TOWNSHIPS

CAMBRIA: The mountain ridge crosses through the center of the town; on either side the surface is level or undulating. The lake ridge crosses the northern part of the town. Twelvemile Creek is the principal stream. The soil consists of sandy loam alternating with clayey loam.

Products: Fruit, hay and grain, and vegetables along the ridges.

Average values of farm land range from $70 to $120 an acre.

HARTLAND: The surface is level or gently undulating. The principal streams are Eighteenmile and Johnson creeks. The soil south of the ridge is a clayey loam; to the north it is a sandy and gravelly loam.

Products: Fruit, vegetables, dairy products, hay and grain.

Average values of farm land range from $50 to $100 an acre.

LEWISTON: The mountain ridge extends through this town, dividing it into two nearly equal portions. Along the base of the ridge, the surface is broken or rolling; elsewhere it is level. The principal streams, Sixmile, Twelvemile, and Fish creeks, take their rise in this town, and Niagara River forms its western boundary. The soil is a sandy and clayey loam.

Products: Fruit, vegetables and some dairy products.

Average values of farm land range from $75 to $100 an acre.

LOCKPORT: The surface in the northern part of the town through which the mountain ridge extends is broken and hilly. In the central and southern parts it is level. Eighteenmile, Mud, and Tonawanda creeks are the principal streams, Tonawanda Creek forming the southern boundary. The Erie Canal also passes through the western part of the town. The Niagara limestone crops out along the mountain ridge. The soil is a clayey loam intermixed with marl. In the north it is stony.

Products: Fruit, dairy products and vegetables, hay and grain.

Average values of farm land range from $90 to $135 an acre.

NEWFANE: The surface is level. Eighteenmile Creek is the principal stream. The soil is generally a sandy loam, some portions being interspersed with clay.

Products: Apples, peaches and pears; also dairy products, tomatoes and canning crops.

Average values of farm land range from $90 to $150 an acre.

NIAGARA: The surface is level. Cayuga and Bergholtz creeks flow through the town and Niagara River forms the southern boundary. The soil is a heavy clay. Goat Island and the American part of Niagara Falls belong to this town.

Products: Hay and grain; also dairy products.

Average values of farm land range from $30 to $50 an acre.

PENDLETON: The surface is level or gently undulating. Tonawanda Creek forms the southern boundary of the town and Bull Creek crosses the western part. The soil is generally a clayey loam.

Products: Hay and grain, and dairy products.

Average values of farm land range from $40 to $60 an acre.

PORTER: The surface is level. Fourmile and Sixmile creeks and the west branch of Twelvemile Creek cross the town, Niagara River forming the western boundary. The soil along the lake shore is composed principally of clay mixed with marl. In the central and southern parts it is a sandy and gravelly loam.

Products: Fruit, dairy products, hay and grain.

Average values of farm land range from $50 to $125 an acre.

ROYALTON: The surface is generally level or undulating, except in the northern part where the mountain ridge crosses the town. Mud Creek rises in this town, and Tonawanda Creek forms the southern boundary. The soil is a clayey loam.

Products: Hay and grain, dairy products and some fruit in the northern part.

Average values of farm land range from $40 to $100 an acre.

SOMERSET: The surface is level. Golden Hill and Fish creeks cross the town. The soil is generally a sandy loam, in some places mixed with clay.

Products: Apples, peaches, pears, plums; also dairy products.

Average values of farm land range from $75 to $150 an acre

WHEATFIELD: The surface is level or gently undulating. Niagara River and Tonawanda Creek form the southern boundary. The other principal streams are Cayuga and Bergholtz creeks. The soil is generally a clayey or silty loam.

Products: Hay, grain and dairy products.

Average values of farm land range from $30 to $50 an acre.

WILSON: The surface is level. The east branch of Twelvemile Creek crosses the town near the center, and the west branch crosses the northwestern part. The soil is a sandy, clayey loam.

Products: Apples, pears, peaches; also dairy products and canning crops.

Average values of farm land range from $40 to $125 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The two northern lines of the New York Central extend from Orleans west through the county to Niagara Falls and from that point to North Tonawanda and Buffalo. At Lockport Junction a branch extends southwest to North Tonawanda. Another branch, used by the Lackawanna Steel Corporation, extends northwest from Cambria to Pekin. The Erie Railroad runs from Buffalo through North Tonawanda to Niagara Falls.

Electric Roads

There are three electric railway systems in the county, as follows: The electric lines of the International Railway Company extend from Niagara Falls and from Olcott to North Tonawanda and Buffalo; the Buffalo, Lockport and Rochester passes from Rochester to Lockport, where it connects with electric lines running into Buffalo; the Lewiston and Youngstown Frontier Railway runs along the west side of the county between Youngstown and Niagara Falls.

Waterways

The Barge Canal crosses the county, passing through Middleport, Lockport, and North Tonawanda.

Improved Highways

Niagara Falls can be reached by three improved highways — one from Youngstown on the north; a second from the east; and a third from North Tonawanda, another road to the latter place extending to Buffalo. A highway from Olcott runs through Lockport, and south into Erie County. The ridge road from the east side of the county due west to Lewiston is a state road, with the exception of about three miles east of Dickersonville. Improved roads have also been constructed in the towns of Somerset, Newfane, Royalton, Lockport, Cambria, Lewiston, and Wheatfield, in all a total of 149 miles of completed improved highways in the county, with 19 miles in addition under construction.

AVAILABLE MARKETS

Lockport, Niagara Falls, and North Tonawanda have extensive manufacturing interests, with more than 350 establishments employing 13,000 persons. These three cities have a total population of over 74,000, and furnish excellent local markets.

Buffalo, Rochester, and other important cities on the New York Central Railway receive truck crops, small fruit, grain, and animal products from Niagara County. The villages along the railroads in the fruit-growing sections, the most active of which are Gasport, Middleport, Barker, Burt, Wilson, Ransomville, and Lewiston, ship many carloads of fruit and vegetables daily during the harvesting season.

There are several canning factories and fruit drying establishments. One of the largest canning factories, which is located at Middleport, handles quantities of all kinds of fruit, particularly pears.

With the present facilities for transportation, fruit may reach the New York market within forty-eight hours, and the Chicago market within about the same time. There are in the county numerous cold storage plants, several of which have great capacity, located at Lockport, Suspension Bridge, Gasport, Middleport, Newfane, Burt, Barker, Olcott, Wilson, Ransomville, and Youngstown. Nineteen cold storages are used entirely for fruit.

Practically all the milk is used as market milk and cream in the cities of Buffalo, Rochester, Niagara Falls, and Tonawanda.

The agricultural organizations are as follows:

Frontier National Farm Loan Association.
Granges: Pomona and ten subordinate granges.
Lockport Cooperative Dairy Association, Inc.
Lockport Growers' Cooperative Association, Inc.
Newfane Growers' Cooperative Association, Inc.
Niagara County Beekeepers' Association.
Niagara County Dairymen's League.
Niagara County Farm Bureau Association.
Niagara County Farmers' Club.
Niagara District Fruit Growers' Cooperative Association, Inc.
Niagara Frontier Fruit Growers' Association.
Niagara River Growers' Cooperative Association.
Olcott Growers' Cooperative Association, Inc.
Ransomville Cooperative Association, Inc.
Sanborn Cooperative Company.
West Somerset Cooperative Association, Inc.

EDUCATIONAL FACILITIES

Niagara University is located at Niagara Falls.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located as follows: Barker, Gasport, Lewiston, Lockport, Middleport, Newfane, Niagara Falls, North Tonawanda, and Wilson.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910.)

Land in farms	305, 800 acres
Number of farms	4, 346
Per cent of farm land improved	92.5

LIVE STOCK PRODUCTS

Milk sold	1, 469, 606 gal.
Cream sold	9, 641 gal.
Butter fat sold	293, 751 lbs.
Butter produced	1, 026, 741 lbs.
Cheese produced	2, 593 lbs.
Eggs produced	1, 556, 470 doz.
Wool produced	16, 212 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	15, 510
Cattle	19, 833
Sheep	28, 241
Swine	17, 502
Poultry	261, 290

BEES

Number of colonies	2, 837

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	19, 261	728, 478 bu.
Oats	33, 080	996, 239 bu.
Wheat	26, 717	577, 082 bu.
Barley	1, 472	32. 237 bu.
Buckwheat	1, 519	31, 065 bu.
Rye	1, 496	28, 141 bu.
Hay and forage	67, 539	82, 468 tons
Special crops:		
Potatoes	6, 918	663, 192 bu.
Vegetables, other than potatoes	6, 953	....
Dry edible beans	5, 265	73, 273 bu.
Dry peas	176	2, 708 bu.
Fruits:		
Apples	804, 155 trees	2, 366, 600 bu.
Peaches and nectarines	591, 350 trees	561, 439 bu.
Pears	381, 710 trees	216, 227 bu.
Plums and prunes	180, 801 trees	148, 792 bu.
Cherries	61, 786 trees	29, 011 bu.
Quinces	58, 296 trees	56, 124 bu.
Grapes	358, 312 vines	4, 065, 201 lbs.
Small fruits	752 acres	1, 179, 339 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4, 262	3, 941

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	13, 998	12, 804
Cattle	19, 110	17, 723
Sheep	12, 549	10, 698
Swine	12, 638	11, 345
Poultry	270, 300	218, 499

BEES

	1917 Number	1918 Number
Number of colonies	2, 316	2, 342

SELECTED CROPS

	1917	1918		
Cereals:	Acres	Acres	Yield	
Corn	12,682	5,111	37,147	bu.
Oats	19,865	27,542	855,276	bu.
Barley	1,905	3,237	50,104	bu.
Buckwheat	2,455	1,715	24,937	bu.
Wheat (winter)	26,627	23,049	441,833	bu.
Wheat (spring)	181	357	6,602	bu.
Rye	1,372	1,718	24,469	bu.
Hay and forage:				
Alfalfa	1,070	1,218	3,003	tons
Other hay	61,303	63,485	78,569	tons
Corn (ensilage)	3,694	2,211	6,524	tons
Corn (fodder)	....	2,702	....	
Special crops:				
Field beans	7,325	2,616	6,312	bu.
Cabbage	2,113	1,960	6,625	tons
Potatoes	5,500	4,610	142,102	bu.
Roots raised for stock food	....	330	....	
Canning factory crops	2,357	2,256	....	
Other vegetables and garden crops	1,713	1,898	....	
Fruits:				
Apples	23,345	25,105	417,638	bu.
Peaches	14,051	14,325	1,351,787	bu.
Pears	6,523	7,357	292,379	bu.
Plums	2,178	2,196	105,512	lbs.
Cherries	1,678	1,536	2,375,902	lbs.
Quinces	....	1,182	71,489	bu.
Vineyard	1,795	1,711	3,479,616	lbs.
Small fruits	1,333	1,636	....	

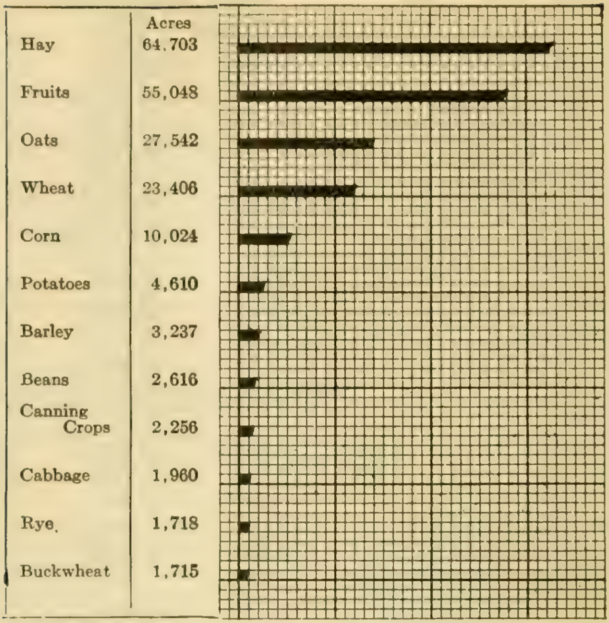
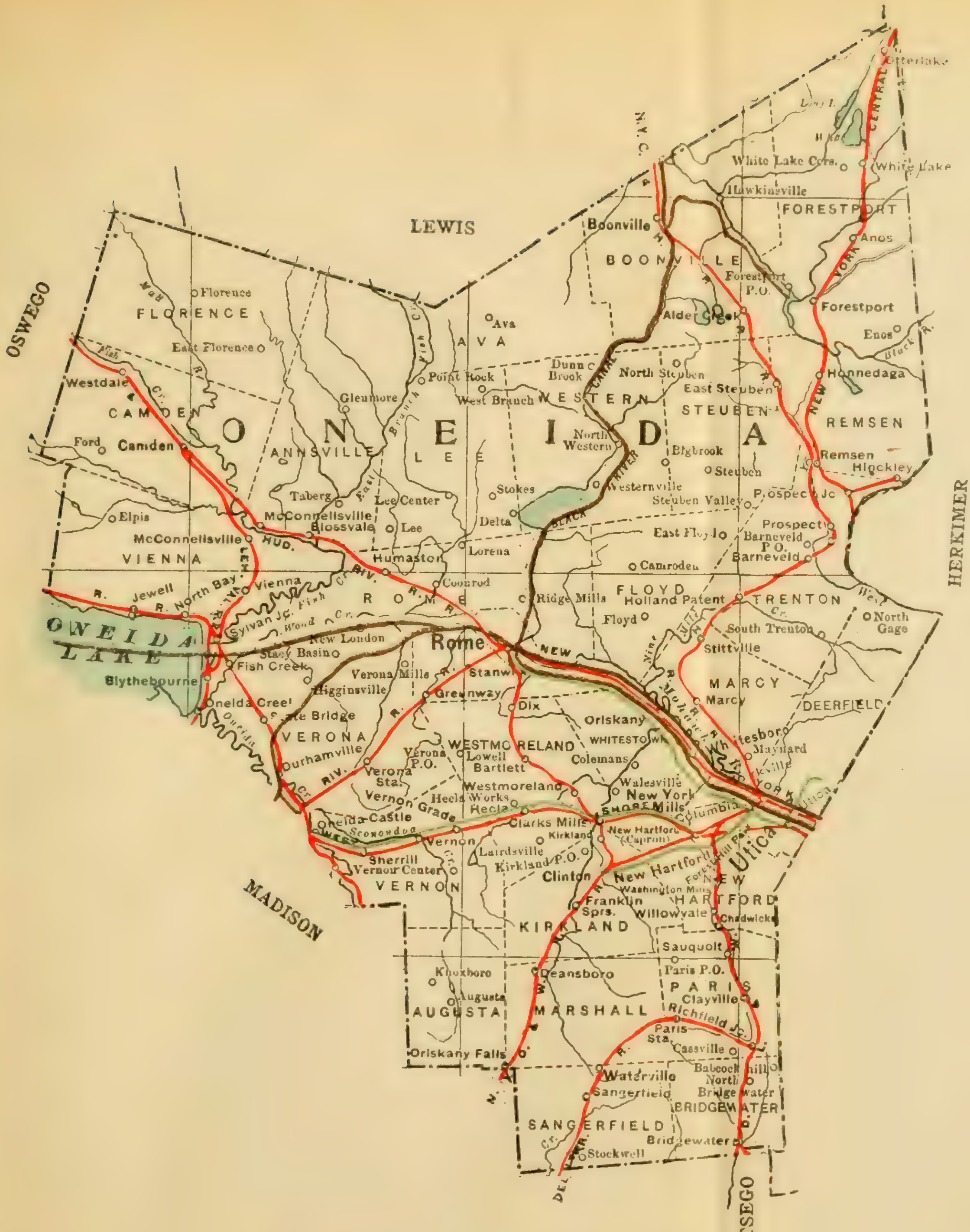


FIG. 106.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN NIAGARA COUNTY



LEWIS
OSWEGO
HERKIMER
MADISON
OTSEGO
ONEIDA
ONEIDA LAKE
N.Y.C.
Otterlake
White Lake Cors.
White Lake
Hawkinsville
FORESTPORT
Boonville
BOONVILLE
Forestport P.O.
Forestport
Anos
Enos
Black R.
Alder Creek
Florence
FLORENCE
East Florence
Ava
AVA
Westdale
CAMDEN
Point Rock
Glenmore
Dunn Brook
North Steuben
East Steuben
Hinnedaga
West Branch
WESTERN
STEUBEN
REMSEN
Ford
Camden
ANNSVILLE
LEE
North Western
Bigbrook
Steuben
Remsen
Hinckley
Taberg
Lee Center
Stokes
Westernville
Steuben Valley
Prospect Jc
McConnellsville
Blossvale
Lee
Elpis
Delta
Black River
East Floyd
Prospect
Barneveld P.O.
Barneveld
McConnellsville
VIENNA
Humaston
Lorena
Camroden
Jewell
North Bay
Vienna
Coonrod
ROME
Ridge Mills
FLOYD
Holland Patent
TRENTON
North Gage
Floyd
South Trenton
Sylvan Jc.
New London
Rome
Stittville
Stacy Basin
Fish Creek
Verona Mills
Stanwix
NEW
Blythebourne
Higginsville
Greenway
MARCY
Marcy
DEERFIELD
Oneida Creek
State Bridge
Dix
Oriskany
Whitesboro
Maynard
VERONA
WHITESTOWN
Durhamville
Verona P.O.
Lowell
Bartlett
WESTMORELAND
Colemans
Yorkville
Verona Sta.
Westmoreland
Walesville
New York Mills
Vernon Grade
Hecla Works
Hecla
Oneida Castle
Clarks Mills
Kirkland
SHORE
Columbia
Utica
Sconondoa
Vernon
Lairdsville
New Hartford (Capron)
Sherrill
Vernon Center
VERNON
Kirkland P.O.
Clinton
New Hartford
Forest Hill
NEW HARTFORD
Washington Mills
Franklin Sprs.
Willowvale
Chadwicks
KIRKLAND
Sauquoit
Knoxboro
Deansboro
Paris P.O.
PARIS
Augusta
Clayville
AUGUSTA
MARSHALL
Richfield Jc.
Paris Sta.
Cassville
Oriskany Falls
Waterville
Babcock hill
North Bridgewater
Sangerfield
BRIDGEWATER
SANGERFIELD
Bridgewater
Stockwell
DEL.

Map of Oneida County, Showing Townships
Red, railroads; green, electric roads; brown, canals

ONEIDA COUNTY

This county is located near the center of the state in the upper part of the Mohawk Valley. It has an area of 800,000 acres. From north to south it extends approximately 45 miles and from east to west 38 miles. The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Rome (city)	21,926	New Hartford	7,864
Utica (city)*	80,589	Paris	3,018
Annsville	1,450	Remsen	983
Augusta	2,056	Sangerfield	2,022
Ava	659	Steuben	839
Boonville	3,260	Trenton	2,671
Bridgewater	862	Vernon	3,841
Camden	3,359	Verona	3,752
Deerfield	1,836	Vienna	1,931
Florence	970	Western	1,150
Floyd	702	Westmoreland	2,115
Forestport	1,170	Whitestown	9,128
Kirkland	4,781		
Lee	1,313	Total	167,331
Marcy	1,260		
Marshall	1,814		

---

* Utica is the county seat.

Note: Rome now has a population of 26,300; Utica, 94,000.

HISTORICAL ASSOCIATIONS

Oneida County was formed from Herkimer in 1798. The name is of Iroquois origin, meaning "there it (the rock) has been set up." The Mohawk Valley, either by land or water, was the great route of the Indians to the far West and Canada. At the point where Rome is now located the route was broken by a neck of swamp land over which the canoes were carried to Wood Creek. This was termed by the English "the great carrying place" to distinguish it from the "little carrying place" around the rapids of the Mohawk at what is now Little Falls. The former was later known as the "Oneida carrying place" to avoid confusion with another point known by the same name in Washington County.

During the early wars opposing armies frequently passed through the natural route afforded by the valley, and the history of Oneida County prior to 1760, aside from the Indian trade carried on over its territory, is mainly one of conflict.

The first settlers were a German couple who pushed past the Palatine settlement at German Flats, and early in 1760 were located at Fort Stanwix, now Rome. At Fort Stanwix, in 1768, the treaty between the Six Nations and the colonists was held, fixing the boundary of their lands, or "line of property," as it was called.

Ten years previous to the Revolution, the Reverend Samuel Kirkland established a mission among the Oneidas. Through his influence and teachings the Oneidas refused to take part against the colonists during the war, in spite of the efforts of Brant, the noted Mohawk leader. As a result the settlers of Oneida County were spared the cruelties practiced by the Indians in neighboring sections.

Since central New York was regarded the point of control of the American colonists, General Herkimer's victory at the battle of Oriskany in 1777 was of great importance in forming the history of our nation. After this battle, the stars and stripes were raised for the first time over Fort Stanwix, or Fort Schuyler, as it was then called. Congress had but recently conceived the design, and the patriots here made their flag from odd pieces of clothing.

In 1784 a treaty was made at Fort Schuyler, whereby all the land then owned by the Indian nations taking part in the treaty, with the exception of certain reservations, was ceded to the state. Through the results of this agreement great impetus was given to immigration and to the growth and prosperity of Oneida County.

Shortly after the Revolution families from New England made permanent settlements within the county. The opening of the Erie Canal and the early railroads had a considerable effect on the growth of Utica and Rome, and encouraged the building up of various other villages along their lines.

DEVELOPMENT OF INDUSTRY

In Oneida County the natives cultivated small patches of ground devoted principally to the production of corn and apples. Larger clearings were made by the early settlers, where corn, wheat, and vegetables were grown. Oats also became an important crop. Excellent water power being available, asheries, distilleries, saw mills, woolen mills, and tanneries were important factors in the early development of the county. The first woolen factory in the state was erected at Oriskany, probably in 1809 At about that time the first Merino sheep in the state where imported from Spain and were kept on a farm north of the Mohawk opposite Oriskany. The first cotton mill erected in the state was the Oneida factory, also established in 1809, not far from the canal in Yorkville. This was the beginning of an industry which has since become very prominent, both in Utica and New York mills. The dairy industry has been important in Oneida County since the early settlements. Dairying was at first of greater importance north of the Mohawk, although at the present time it is very prominent in all parts of the county. Many pure-bred cattle are kept, a large proportion of which are Holsteins.

With the opening of the railroads dairying developed rapidly, and large quantities of cheese and butter were manufactured. The first cheese factory was opened in the town of Rome, and at about the time of the Civil War Utica was the largest cheese market in the world. The greater part of the milk produced is now shipped to New York City, although at points distant from the railroads, in the towns of Western, Lee, Ava, and Boonville, cheese factories are still numerous.

Hops were first grown in the county at about 1820. This crop steadily increased in importance and for many years Oneida County led in hop production.

The hay crop is extensive, Oneida County ranking third in the state.

Gardening is a prominent industry in the vicinity of Rome and Utica. In several towns a relatively large acreage is devoted to raising peas, beans, corn, and pumpkins for canning factory purposes, placing Oneida County at the head in the production of these crops.

Important manufacturing interests are located at Rome and Utica, including copper, iron, and cotton and woolen materials (p. 482).

CLIMATE AND RAINFALL

Climatological records for Oneida County are taken from the records made at the Rome station at an elevation of 480 feet.

The average dates of the last killing frost in spring and the first in fall are May 10 and September 29, respectively, giving a growing season of 142 days.

In the following table the data for temperature and precipitation cover the period from 1889 to 1918. The snowfall data covers the period 1901 to 1918:

RECORD OF TEMPERATURE AND PRECIPITATION AT ROME

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	20.4	64	1890	—27	1905	3.71	1.30	1916	26.5
February	20.1	55	1892	—22	1916	3.82	2.13	1893	26.2
March	29.1	75	1903	—21	1916	4.13	2.45	1892	14.4
April	44.9	87	1915	15	1904*	2.80	1.27	1902	1.5
May	56.2	95	1904*	24	1903*	4.13	2.47	1918	......
June	64.7	97	1904*	31	1894	4.68	3.25	1903	......
July	69.7	98	1892	42	1917*	4.84	2.30	1903	......
August	67.5	97	1916*	40	1915	4.43	3.23	1917	......
September	59.9	93	1915	30	1897*	3.94	3.48	1890	......
October	48.6	89	1916	20	1904	3.60	2.40	1903	0.1
November	36.1	70	1916	0	1891	3.91	2.42	1900	11.4
December	24.6	67	1901	—19	1902	4.25	3.10	1901	29.1
Year	45.2	98	1892	—27	1905	48.24	3.48	1890	109.2

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

A broad valley, nearly level, extends east and west through the center of the county, and from it, both north and south, the surface rises into a broken and hilly region. The highlands occupying the southern part lie in ridges extending north and south. North of the central valley the surface rises abruptly to a height of 800 to 1,200 feet and spreads out into a nearly level plateau broken by the ravines of the streams.

The lowest part of the county is near Oneida Lake, while the highest points are Tassel Hill, 1,944 feet above sea level, in the southern part of the town of Marshall; and Penn Mountain, 1,806 feet above sea level, in the northern part of the town of Steuben.

The eastern part of the central valley is drained by the Mohawk flowing east and the western part by Wood Creek flowing west. This valley affords a natural road from the Hudson to the great lakes and is the lowest pass through the Appalachian Mountain system. The Mohawk rises on the northern border of the county and flows in a southerly direction to Rome, where it turns to the southeast. Its principal tributaries are Ninemile Creek and Lansing Kill from the north, and Sauquoit and Oriskany creeks from the south. Black River flows across the northeast corner of the county; East Canada Creek forms a portion of the east boundary; the head branches of the Unadilla and Chenango drain the southern border, and Oneida, Wood, and Fish creeks drain the western part. Oneida Creek extends several miles along the west border. In the extreme northeast corner are several small creeks and ponds.

The soil in the northeast is light and sandy. The central valley, one of the most fertile portions of the state, has a soil of sandy and gravelly loam and alluvium mixed with lime and gypsum. The highland region south of the river has a soil composed of clay and sand and gravelly loam.

The valuation of land varies considerably, not only in different parts of the state, but in different sections of the same county. In Oneida County, for instance, good farms within easy reach of railroads, or on or near state roads are valued at from $75 to $250 an acre; those on county roads at from $50 to $150 an acre, and those more remote from railroads and on dirt roads at from $10 to $75. Sections less favorable for farming, including sand plains, etc., are valued at much less. Land in the southern part of the county, being generally smoother and more productive, sells at a higher price than land in the northern part.

DESCRIPTION BY TOWNSHIPS

ANNSVILLE: The surface is broken with ridges running east and west, gradually increasing in height toward the north. The east branch of Fish Creek forms a part of the east boundary and flows through the southeastern part, also forming a part of the southern boundary. Florence and Fall creeks are tributaries of the same stream. The soil is clayey in the south, and sandy, gravelly, and stony in other parts.

Products: Potatoes, grain, hay, sweet corn for canning establishments, dairy products, silo corn, buckwheat, rye and wheat.

Average values of farm land range from $20 to $50 an acre.

AUGUSTA: The surface is a rolling upland, two ranges of hills extending north and south through the town being separated by Skanandoa Creek. Oriskany Creek flows through the extreme southeast corner. The town has a fertile limestone soil, also clay and sandy loam.

Products: Alfalfa, potatoes, corn for silo, buckwheat, rye, wheat, canning factory crops, and dairy products.

Average values of farm land range from $75 to $150 an acre.

AVA: The surface is a moderately uneven upland 1,100 to 1,500 feet above sea level. It is drained by Fish Creek and the east and west branches of the Mohawk. The soil is a silty and gravelly loam.

Products: Corn, potatoes, buckwheat, hay, pork and dairy products.

Average values of farm land range from $25 to $50 an acre.

BOONVILLE: The surface is a hilly, broken upland 1,100 to 1,500 feet above sea level. Black River flows through the northeastern part. Lansing Kill rises near the center and flows south to the Mohawk. The soil is a silty loam, some places being stony and sandy.

Products: Potatoes, hay, dairy products, corn for silo and buckwheat.

Average values of farm land range from $50 to $75 an acre.

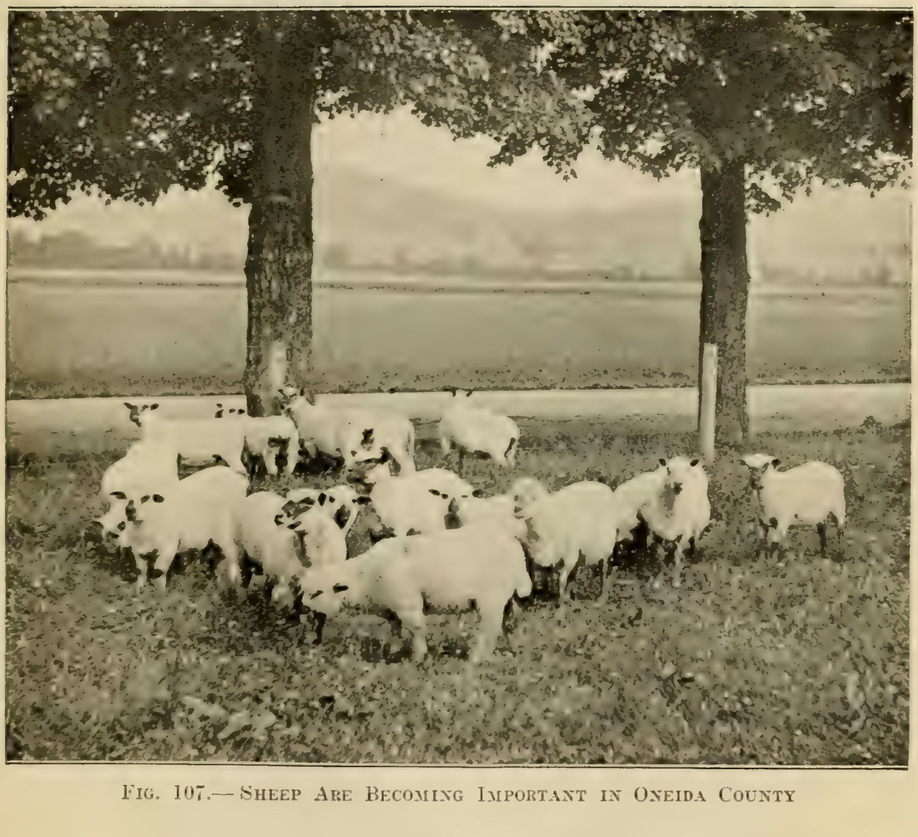


FIG. 107.— SHEEP ARE BECOMING IMPORTANT IN ONEIDA COUNTY

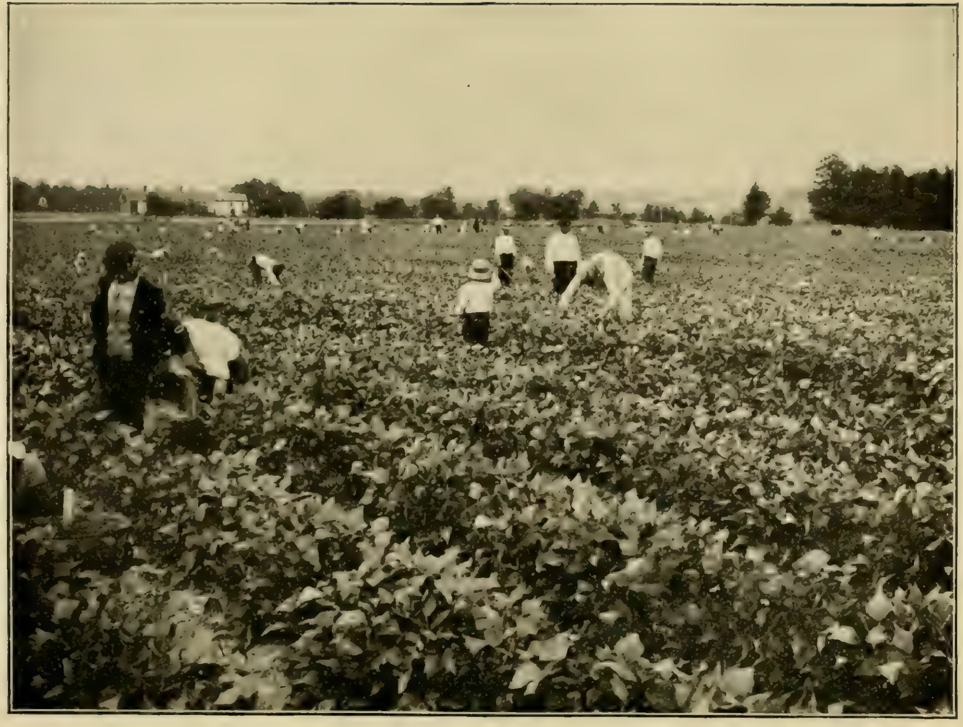


Fig. 108. — Picking Beans on Three Hundred Acre Bean Farm of The Burt Olney Canning Company

BRIDGEWATER: The surface is uneven. The valley of the west bank of the Unadilla and its tributary, locally known as "Bridgewater Flats," in the north, is about a mile wide, decreasing to about a half mile in width farther south. The hills on the east and west borders rise from 300 to 600 feet above the valley, the slopes often being quite steep. The soil in the east is a gravelly loam and in the west a silty loam.

Products: Potatoes, hay, dairy products, corn for silo, buckwheat, rye and wheat.

Average values of farm land range from $65 to $100 an acre.

CAMDEN: The surface is rolling, gradually rising toward the north, where it is broken by hills rising several hundred feet above Oneida Lake. The west branch of Fish Creek flows diagonally through the town to the southeast. Mad River is a tributary to this stream, and Little River, another tributary, flows near the southern boundary. The soil is a sandy loam, in some places gravelly and stony, but generally well adapted to grazing.

Products: Dairy products, hay, potatoes, corn for silo, buckwheat, rye, wheat and canning factory products.

Average values of farm land range from $10 to $75 an acre.

DEERFIELD: The surface is principally a high plateau 500 to 1,000 feet above the Mohawk. A broad intervale partly overflowed during high water extends along the Mohawk opposite Utica. On the northeast the surface descends abruptly to West Canada Creek. The soil on the flats is a deep, rich alluvial loam; on the hills it is a silty and gravelly loam.

Products: Dairy products, hay, potatoes, corn for silo, buckwheat, rye, wheat and garden crops.

The average values of farm land range from $40 to $150 an acre.

FLORENCE: The surface is rolling, most of it rising 800 to 1,000 feet above sea level. Mad River flows southeast through the town. The soil is stony and light, underlaid by the Hudson River shales.

Products: Dairy products, hay, potatoes, corn for silo, and buckwheat.

Average values of farm land range from $10 to $40 an acre.

FLOYD: The surface is rolling, gradually rising to the northern border where it attains an elevation of 1,200 feet above sea level. Ninemile Creek flows through a small portion of the southeastern part.

Products: Potatoes, hay, dairy products, corn for silo, buckwheat, rye, wheat and some alfalfa.

Average values of farm land range from $25 to $100 an acre.

FORESTPORT: The surface is an elevated upland averaging from 1,100 to 1,600 feet above tide. Black River and its tributaries form the principal drainage. In the northern part are Long, Otter, and White lakes. The soil is generally a light sandy loam.

Products: Dairy products, grain, hay, potatoes and some corn.

Average values of farm land range from $10 to $50 an acre.

KIRKLAND: The surface is a hilly upland divided into two general ridges by the valley of Oriskany Creek, which flows northeast through the center. The hills are from 300 to 600 feet high, the slopes generally being steep. The soil is a rich loam, mixed with limestone, with alluvial deposits along the shores of Oriskany Creek.

Products: Potatoes, alfalfa, dairy products, corn for silo, wheat, buckwheat, rye, hops and canning factory products.

Average values of farm land range from $50 to $150 an acre.

LEE: The surface is rolling or moderate hilly, rising gradually from the lowlands in the south to an elevation of 1,100 feet above sea level. The west branch of the Mohawk flows through the northeast corner, and the east branch of Fish Creek forms a part of the west boundary. The soil is a clayey, sandy, and gravelly loam, stony in some localities.

Products: Dairy products, pork, grain, hay, potatoes, corn for silo, buckwheat and canning factory products.

Average values of farm land range from $10 to $50 an acre.

MARCY: The surface is rolling. A wide intervale borders on the river from which rises an irregular plateau 300 to 500 feet above the valley. Ninemile Creek flows through the west corner. On the upland the soil is a silt or sandy and gravelly loam, and on the flats it is alluvial.

Products: Dairy products, hay, potatoes, corn for silo, wheat, rye, buckwheat and garden products.

Average values farm land range from $50 to $150 an acre.

MARSHALL: The surface is a hilly upland, the hills rising to a height of 1,100 to 1,500 feet above sea level. Oriskany Creek flows northeast through the western part. The soil is a fertile sandy loam and limestone soil.

Products: Alfalfa, potatoes, hops, corn for silo, wheat, rye and buckwheat.

Average values of farm land range from $50 to $150 an acre.

NEW HARTFORD: The surface is level or gently undulating, except in the extreme eastern part, where there is a low range of hills. Sauquoit Creek flows north through the center. The soil is a rich calcareous loam.

Products: Potatoes, hay, dairy products, fruit, truck crops, corn for silo, wheat, buckwheat, rye and canning factory products.

Average values of farm land range from $75 to $200 an acre.

PARIS: The surface is a hilly upland broken by the valley of Sauquoit Creek, which flows east and north through the town. The hills bordering the valley are generally steep and rise from 200 to 400 feet in height. The highest point, known as Tassel Hill, in the southwest corner, rises 1,944 feet above sea level. The soil is a sandy, calcareous loam.

Products: Potatoes, alfalfa, dairy products, corn for silo, wheat, rye, buckwheat and canning factory products.

Average values of farm land range from $50 to $150 an acre.

REMSEN: The surface is an elevated upland broken by hills and ridges, the mean elevation of which is 1,200 to 1,400 feet above tide. Black River and its tributaries drain the central and northern parts, and the Hinckley Reservoir lies on the southeast boundary. The soil is generally a light sandy loam.

Products: Dairy products, grain, hay, corn for silo and buckwheat.

Average values of farm land range from $20 to $60 an acre.

SANGERFIELD: The surface is a moderately hilly upland 1,200 to 1,800 feet above sea level. The streams are small and flow north to the Mohawk and south to the Chenango River. Near the center is a swampy section. The soil in the valleys is a rich alluvium; on the hills it is a silty or gravelly loam.

Products: Hay, dairy products, corn for silo, buckwheat, wheat, rye, alfalfa, hops and canning factory products.

Average values of farm land range from $40 to $100 an acre.

STEUBEN: The surface is a hilly upland rising 900 feet in the southeast to 1,600 feet in the northwest. The soil is a sandy or gravelly loam.

Products: Dairy products, pork, grain, hay, corn for silo and buckwheat.

Average values for farm land range from $25 to $60 an acre.

TRENTON: The surface rises from West Canada Creek, which lies on the eastern border, to a height of 600 to 800 feet, and spreads out into an upland broken by ridges of drift. Steuben Creek flows through the northern part and Ninemile Creek through the southern part. The soil is largely a sandy loam with some sections of clayey loam.

Products: Dairy products, hay, corn for silo and buckwheat.

Average values of farm land range from $50 to $100 an acre.

VERNON: The surface is rolling, with a mean elevation of from 500 to 1,100 feet. The principal streams are Oneida Creek on the west boundary and Skanandoa Creek, which flows through the eastern part. The soil is a fine quality of gravelly and clayey loam underlaid by limestone, waterlime, and gypsum.

Products: Alfalfa, potatoes, dairy products, corn for silo, canning crops, buckwheat, rye, wheat and hops.

Average values of farm land range from $50 to $150 an acre.

VERONA: The surface is generally level, slightly rolling in the east and marshy in the west. Oneida Creek and Lake, forming the western boundary, and Wood Creek flowing along the northern boundary, receive the waters of several small streams. The soil is a deep, rich alluvial loam.

Products: Dairy products, corn for silo, hay, buckwheat, rye and wheat.

Average values of farm land range from $50 to $100 an acre.

VIENNA: The surface rises gradually from Oneida Lake on the southern border to an elevation of about 100 feet, then spreads out into a rolling plateau. The northwestern part is hilly. Wood Creek and Oneida Lake form the southern boundary. Fish Creek forms most of the eastern boundary and its west branch forms a part of the northern boundary. The soil is a light sandy loam underlaid by clay. In the southeast, along Fish Creek, it is alluvium.

Products: Dairy products, grain, hay, potatoes and corn for silo.

Average values of farm land range from $50 to $75 an acre.

WESTERN: The surface is a hilly upland broken by gullies of the streams. The Mohawk River and Lansing Kill Creek join near the center and flow south and southwest into Rome. The soil is generally a sandy or silty loam; in the valleys it is alluvium.

Products: Dairy products, pork, hay, grain, corn for silo and buckwheat.

Average values of farm land range from $15 to $75 an acre.

WESTMORELAND: The surface is a rolling upland with an average elevation of 500 to 700 feet above sea level. In the southern part the highest elevations rise 1,100 feet. The streams are mostly small brooks. The soil is principally a gravelly and clayey loam.

Products: Dairy products, grain, hay, corn for silo, wheat and buckwheat.

Average values of farm land range from $50 to $100 an acre.

WHITESTOWN: A broad, flat intervale extends along the Mohawk. From this intervale the surface rises in gentle slopes about 100 feet and then spreads out into a rolling upland. Oriskany Creek flows northeast through the center and Sauquoit through the eastern part. The soil is generally a fine quality of gravelly loam and alluvium.

Products: Grain, hay, dairy products, potatoes, corn for silo, wheat, buckwheat and rye.

Average values of farm land range from $65 to $150 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

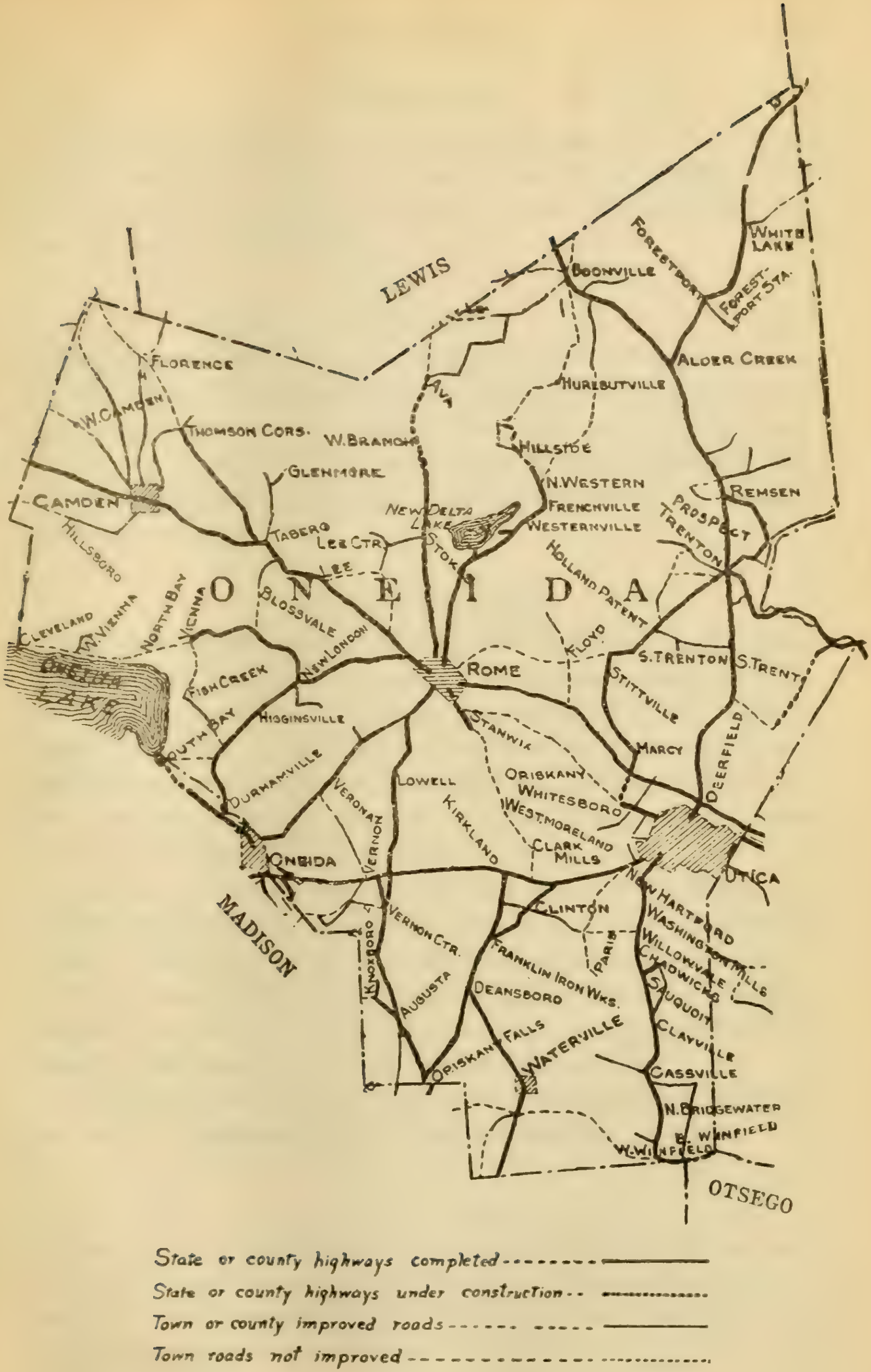
Two trunk lines, the New York Central and the West Shore, cross the county, both passing through Utica. The Black River division extends north from Utica to Watertown, connecting at Remsen with the Adirondack division running to Montreal.

The New York Central trunk line extends through Rome and connects at that place with the Rome, Watertown and Ogdensburg main line, over which trains are run through to Utica.

The Utica division of the Delaware, Lackawanna and Western runs south from Utica to New York by way of Binghamton.

The New York, Ontario and Western has terminal stations at both Rome and Utica, and a line of this road runs along Oneida Lake in the western part of the county, extending to Oswego on the west and connecting with the Rome and Utica line in Madison County. From Richfield Junction a branch of this road extends south and connects with the Unadilla Valley Railroad at Bridgewater, then turning east to Richfield Springs.

From Camden the Lehigh Valley Railroad extends down the east end of Oneida Lake to Ithaca, crossing the New York, Ontario and Western at Sylvan Junction.


LEWIS
OSWEGO
HERKIMER
MADISON
OTSEGO
O N E I D A
White Lake
Boonville
Forestport
Forestport Sta.
Alder Creek
Florence
W. Camden
Thomson Cors.
Hurlbutville
Hillside
W. Branch
Ava
Glenmore
Camden
N. Western
Frenchville
Westernville
Remsen
Prospect
Trenton
New Delta Lake
Stokes
Tabero
Lee Ctr.
Lee
Hillsboro
Holland Patent
Blossvale
Cleveland
W. Vienna
North Bay
Vienna
Oneida Lake
New London
Floyd
Rome
S. Trenton
S. Trent
Fish Creek
Stittville
South Bay
Higginsville
Stanwix
Marcy
Durhamville
Lowell
Oriskany
Whitesboro
Deerfield
Verona
Kirkland
Westmoreland
Clark Mills
Utica
Oneida
Vernon
Clinton
New Hartford
Washington Mills
Paris
Willowvale
Chadwicks
Vernon Ctr.
Franklin Iron Wks.
Sauquoit
Knoxboro
Deansboro
Augusta
Clayville
Oriskany Falls
Waterville
Cassville
N. Bridgewater
E. Winfield
W. Winfield
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Electric Roads

The West Shore Railroad is operated by electricity from Utica to Syracuse. An electric line extends from Rome through Utica to Little Falls, Herkimer County. From Utica a short line extends southwest to Clinton.

Waterways

The Barge Canal extends across the county and through Oneida Lake. The old Erie Canal, which turns from New London to the southwest, is navigable from that point through this county and Madison. The Black River Canal, connecting the Black River and the Mohawk, is navigable through the county for small barges.

Improved Highways

The state road between Albany and Buffalo extends from Utica through Oneida to Syracuse. Rome has connection with this road by means of a highway running from Utica through Rome to Oneida. A road from Utica runs north through Lewis and Jefferson counties to the counties of St. Lawrence and Franklin. Another road runs south from Utica through Bridgewater to West Winfield, Herkimer County.

A number of improved highways also radiate from Rome, including the following: northwest through Camden into Oswego County; north to Ava; north to Hillside; and west to Vienna.

In addition to those already mentioned a number of other roads complete an excellent system of improved highways in this county, which may be seen on the accompanying map.

There are in the county 259 miles of completed improved highways with 15 miles additional under construction.

AVAILABLE MARKETS

Rome is the southern terminal of the Black River Canal and the Barge Canal passes through the city. Three railroads enter the city. The Utica and Mohawk Valley electric line gives the city half-hourly service to the east.

It is one of the greatest copper manufacturing cities in the country. Among the other manufactured products are a wide variety of iron and metal articles. The canning factory business is a very important one.

Rome is also the seat of the State Custodial Asylum.

Utica is the gateway to the Adirondacks, and a center for the railroads that furnish the only means of reaching a large number of the lake towns in northern New York. To the south there are two lines of steam railroad and trolley connections that extend to Oneonta. There is also half-hourly trolley service eastward as far as Little Falls and westward to Syracuse.

The excellent railroad service makes Utica an important shipping center, and New York City may be reached within five and a half hours by rail.

It is one of the greatest cotton manufacturing centers of this country. It is also a center of the knit goods industry and contains one of the largest woolen cloth factories in the state. There are several other extensive manufactures, including hot air furnaces, cast iron pipe, and other iron and brass products.

A state hospital is located at Utica.

There are over 100 establishments handling milk and milk products in Oneida County, which is a great cheese-making section. Among the products are more than 3,000,000 pounds of American cheese, about 2,500,000 pounds of Limburger and quantities of brick, Munster and Swiss cheeses. In the manufacture of Limburger cheese, Oneida County ranks first in the state. About half the milk produced is shipped as market milk, largely to New York City. Nearly 2,000,000 pounds of condensed milk is manufactured.

There are 16 canning factories in the county.

The agricultural organizations are as follows:

Black River Produce Exchange.
Boonville Fair Association.
Central Milk Producers' Association, Inc.
Central New York Poultry and Pet Stock Association.
Farmers' Cooperative Company of Oneida County, Inc.
Granges: Pomona and twenty-one subordinate granges.
Green's Crossing Milk Co., Inc.
Holland Patent Milk & Cream Company.

Oneida County Agricultural Society.
Oneida County Dairymen's League.
Oneida County Farm Bureau Association.
Oneida County Holstein Club.
Oneida County National Farm Loan Association.
Paris Hill Fair Association.
Paris Seed Potato Growers' Association.
Patrons' Cooperative Milk Association, Inc.
Prospect Cooperative Milk and Cream Company.
Rome Producers' Exchange.
Trenton Milk and Cream Company.
Vernon Agricultural Society.
Westmoreland Cooperative Dairy Co., Inc.

EDUCATIONAL FACILITIES

Clinton is the seat of Hamilton College.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Boonville, Bridgewater, Camden, Chadwicks, Clark Mills, Clayville, Clinton, Durhamville, Forestport, Hinckley, Holland Patent, New Hartford, New York Mills, Oriskany, Oriskany Falls, Remsen, Rome, Sauquoit, Sherrill, Barneveld, Utica, Vernon, Verona, Waterville, Westmoreland, and Whitesboro.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	690,431 acres
Number of farms	6,929
Per cent of farm land improved	66.1

LIVE STOCK PRODUCTS

Milk sold	27,920,162 gal.
Cream sold	20,225 gal.
Butter fat sold	844,243 lbs.
Butter produced	435,605 lbs.
Cheese produced	5,445 lbs.
Eggs produced	1,877,492 doz.
Wool produced	3,432 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	16,252
Cattle	99,811
Sheep	6,510

	Number
Swine	18,661
Poultry	276,646

BEES

Number of colonies	3,324

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	10, 341	402, 688 bu.
Oats	26, 006	721, 449 bu.
Wheat	555	14, 384 bu.
Barley	896	25, 105 bu.
Buckwheat	2, 613	54, 411 bu.
Rye	423	7, 572 bu.
Hay and forage	178, 203	321, 802 tons
Special Crops:		
Potatoes	8, 721	1, 192, 575 bu.
Vegetables, other than potatoes	8, 715	....
Dry edible beans	172	2, 214 bu.
Dry peas	98	2, 360 bu.
Fruits:		
Apples	184,979 trees	264,627 bu.
Peaches and nectarines	103 trees	16 bu.
Pears	9,860 trees	7,665 bu.
Plums and prunes	11,686 trees	6,177 bu.
Cherries	5,885 trees	1,447 bu.
Quinces	36 trees	1 bu.
Grapes	6,049 vines	114,405 lbs.
Small fruits	193 acres	382,329 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	6,621	6,310

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	14,818	14,299
Cattle	89,800	83,381
Sheep	4,977	4,567

	1917 Number	1918 Number
Swine	14,185	14,055
Poultry	268,777	247,552

BEES

	1917	1918
Number of colonies	2,040	2,182

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	5,408	5,639	157,413 bu.
Oats	27,882	26,406	614,551 bu.
Barley	1,706	1,909	30,980 bu.
Buckwheat	2,860	4,121	55,730 bu.
Wheat (winter)	1,373	1,312	25,759 bu.
Wheat (spring)	149	393	4,002 bu.
Rye	623	498	7,404 bu.
Hay and Forage:			
Alfalfa	7,317	5,993	15,060 tons
Other hay	146,927	146,098	226,700 tons
Corn (ensilage)	16,806	14,374	115,043 tons
Corn (fodder)	....	3,309	....
Special Crops:			
Field beans	850	1,280	14,127 bu.
Cabbage	891	681	4,088 tons
Potatoes	7,768	8,450	1,086,570 bu.
Roots raised for stock food	....	579	....
Canning factory crops	6,003	5,098	....
Other vegetables and garden crops	2,034	2,471	....
Fruits:			
Apples	5,025	5,983	89,302 bu.
Pears	90	127	2,531 bu.
Plums	53	99	15,901 lbs.
Cherries	53	52	12,541 lbs.
Vineyard	19	....	....
Small fruits	380	663	....

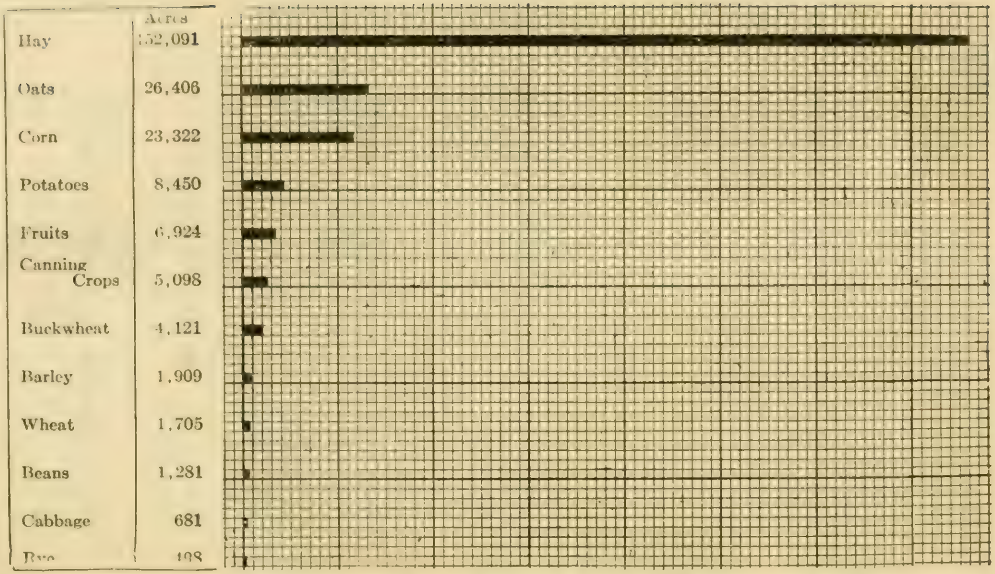
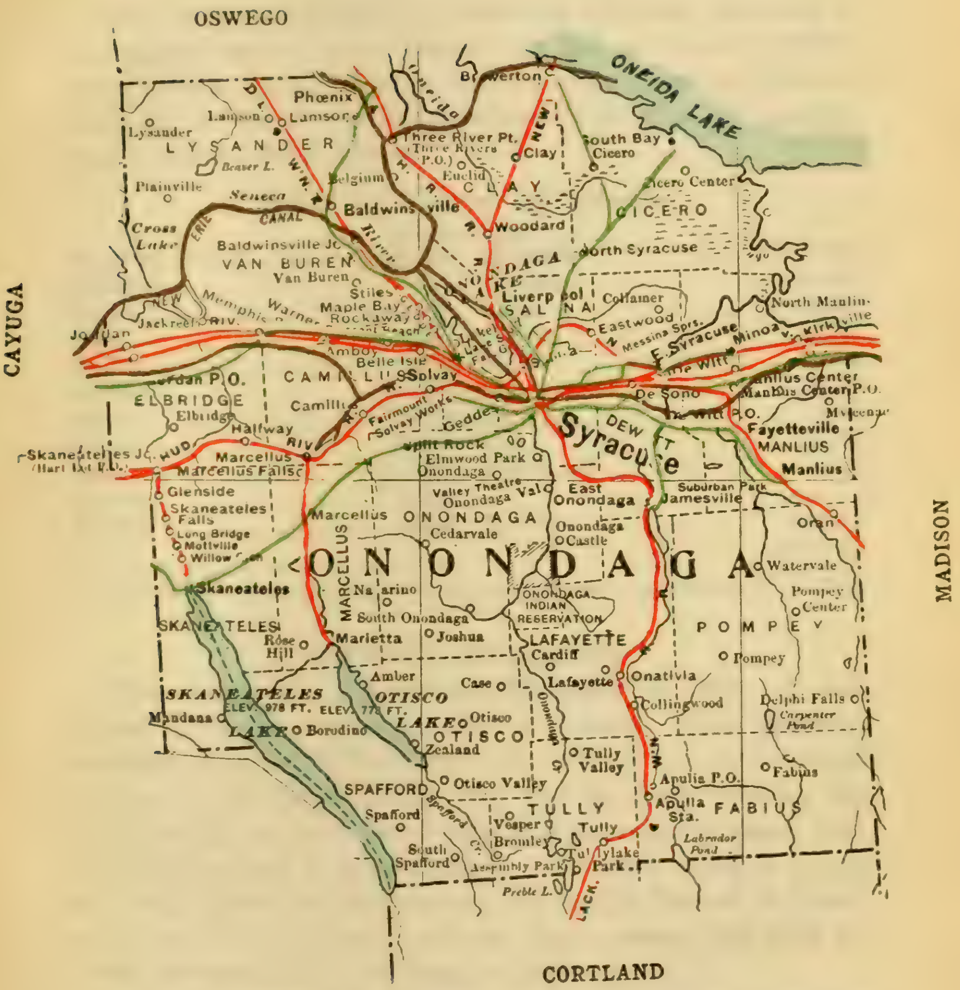


FIG. 109.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN ONEIDA COUNTY


OSWEGO
CAYUGA
MADISON
CORTLAND
ONEIDA LAKE
LYSANDER
VAN BUREN
CLAY
CICERO
SALINA
CAMILLUS
ELBRIDGE
DEWITT
MANLIUS
ONONDAGA
MARCELLUS
SKANEATELES
OTISCO
LAFAYETTE
POMPEY
SPAFFORD
TULLY
FABIUS
Syracuse
Brewerton
Phœnix
Lamson
Lysander
Plainville
Cross Lake
Beaver L.
Seneca
ERIE CANAL
Baldwinsville
Baldwinsville Jc.
Belgium
Three River Pt.
Three Rivers P.O.
Euclid
Clay
Woodard
South Bay
Cicero
Cicero Center
North Syracuse
Liverpool
Collamer
Eastwood
Messina Sprs.
E. Syracuse
Minoa
Kirkville
North Manlius
Van Buren
Stiles
Maple Bay
Rockaway
Jackreef
Jordan
Amboy
Belle Isle
Solvay
Jordan P.O.
Camillus
Elbridge
Halfway
Fairmount
Solvay Works
Geddes
Split Rock
Elmwood Park
Onondaga
Skaneateles Jc.
Marcellus
Marcellus Falls
Glenside
Skaneateles Falls
Long Bridge
Mottville
Willow Glen
Skaneateles
De Witt
De Witt P.O.
Manlius Center
Manlius Center P.O.
Fayetteville
Manlius
Mycenæ
Valley Theatre
Onondaga Valley
East Onondaga
Suburban Park
Jamesville
Onondaga Castle
Oran
Cedarvale
Nanarino
South Onondaga
ONONDAGA INDIAN RESERVATION
Marietta
Joshua
Cardiff
Lafayette
Onativia
Collingwood
Waterville
Pompey Center
Pompey
Rose Hill
Amber
Case
Otisco
Otisco Lake
Delphi Falls
Carpenter Pond
Mandana
ELEV. 978 FT.
ELEV. 778 FT.
SKANEATELES LAKE
Borodino
Zealand
Tully Valley
Apulia P.O.
Apulia Sta.
Fabius
Otisco Valley
Spafford
Vesper
Tully
Bromley
South Spafford
Assembly Park
Tullylake Park
Labrador Pond
Preble L.

Map of Onondaga County, Showing Townships

Red, railroads; green, electric roads; brown, canals

ONONDAGA COUNTY

This county is located in the center of the state, just south of the eastern end of Lake Ontario. It has an area of 499,840 acres. From north to south it has an average extent of 32 miles; from east to west it extends approximately 28 miles. Its population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Syracuse (city)*	145,293	Marcellus	2,927
Camillus	3,031	Onondaga	6,267
Cicero	2,689	Otisco	1,058
Clay	2,661	Pompey	2,344
DeWitt	8,806	Salina	3,958
Elbridge	3,039	Skaneateles	4,619
Fabius	1,570	Spafford	1,082
Geddes	6,739	Tully	1,574
Lafayette	1,447	Van Buren	3,370
Lysander	4,630		
Manlius	6,301	Total	213,992

---

* Syracuse is the county seat. This city now has a population of 171,700.

HISTORICAL ASSOCIATIONS

This county was formed from Herkimer in 1794. It was named from the Onondaga tribe of Indians, whose principal residence was within its border. To this nation was intrusted the care of the grand council fire, and on their territory the great councils of the Iroquois were held to decide on peace, war, and other matters of general policy. The first record of a visit of a white person to this territory was that of Samuel de Champlain, in 1615, a French explorer, who traversed the trail between Brewerton and Chittenango Creek.

At an early period the French saw the necessity of obtaining the friendship of the Five Nations, who were the most powerful of all the Indian tribes. To this end Jesuit missions were established, one of the principal stations being at the seat of the Onondagas. The famous Onondaga salt springs were discovered in 1654 by Father Le Moyne. In 1656 a colony of fifty French under the guidance of priests and with the consent of the Onondagas made a settlement on the north shore of Onondaga Lake near the principal Indian village, on Indian Hill, town of Pompey. Although the colony flourished for some time, a supposed plot of the natives led them to abandon the settlement in 1758. Other attempts at colonization were made by the French, but none proved to be permanent.

After the Revolution, a treaty was made with the Onondagas, by which they ceded to the state all their lands except the Onondaga and Salt Springs reservations, which now lies near the center of the county. The lands thus obtained were set apart for bounty lands to the Revolutionary soldiers of New York, and formed a portion of the military tract. The state reserved for sale and manufacturing purposes the territory surrounding the lake and known as the Onondaga Salt Springs Reservation, embracing the greater part of the present towns of Salina and Geddes and the city of Syracuse. These springs soon became generally known, and attracted many immigrants to this section. Successive sales have greatly reduced the original Indian reservation.

Development through the region of central New York was early stimulated, not only by improvement of navigation facilities, but also by the construction of highways, among which was the great Genesee road and several toll roads. The completion of the Erie Canal gave further impetus to the villages along its route, and new villages rapidly sprang into existence. The Oswego Canal, which was finished in 1828, also added to the development of Onondaga County. The Auburn and Syracuse Railroad was opened ten years later.

DEVELOPMENT OF INDUSTRY

Between 1820 and 1860 the agricultural industry of the county experienced important changes made necessary to meet the new conditions of markets, and new and better knowledge of making sales. Previous to the opening of canals the raising of wheat was followed to a considerable extent, as there was always a ready sale for the crop, though the markets were far away. However, the rapidly increasing shipments eastward of the products of the great grain fields farther west, brought about by the canal and railroads, caused the farmers of this county to turn their attention more to dairying and to the growing of crops less affected by western imports. Fruit growing and the production of barley and other grains increased. The cultivation of tobacco was introduced in 1845, and it soon became an important crop.

Onondaga County now has a large dairy and cattle raising industry, and is noted for its pure-bred stock. There are 190 Holstein breeders in the county owning nearly 4,500 head of cattle, besides several large breeders of Guernseys, Ayrshires, and Jerseys.

At Fayetteville, on the farm of Mr. F. E. Dawley, is a flock of Karakul sheep. These sheep, which are peculiarly interesting and valuable because of their fur-producing qualities, are natives of West Turkestan. Onondaga County was noted at an early day for its fine-wooled sheep, as well as for those grown for mutton.

Alfalfa has been grown continuously in this county since 1848, which is the longest record of successful cultivation made by any section in the East.

The census of 1918 places this county at the head in the production of alfalfa and tobacco. With the exception of Connecticut Valley tobacco, the Onondaga quality is said to be the best grown. Eleven hundred acres are devoted to this crop. Other products are wheat and potatoes, also oats, corn, and other grains. As a fruit and garden section Onondaga has an excellent reputation.

Two notable special crops are teasels and willows. Teasels, which are used for raising the nap on woolen cloth, are produced in the towns of Marcellus and Skaneateles, about 300 acres being devoted to their production. With the exception of a few acres in Oregon, the teasel production of the country is confined to these two towns. The willow production of New York exceeds that of all other states combined. Liverpool is the center of the willow industry of Onondaga County, and is extensively engaged in the manufacture of willow furniture and baskets.

Salt is no longer manufactured in this section, as it can be produced more cheaply in other localities.

Extensive manufactures at Syracuse include soda, and various kinds of machinery and pottery (p. 497).

CLIMATE AND RAINFALL

The meteorological station in Onondaga County is the local office of the United States Weather Bureau at Syracuse, at an elevation of 597 feet above sea level. The official in charge is M. R. Sanford.

Average dates for the last killing frost in spring and the first in fall are April 25 and October 19, respectively, giving a growing season of 177 days.

The following tables, compiled from observations covering the period from 1902 to 1917, show both normal temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT SYRACUSE

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	24.8	68	1906	—22	1914	2.77	1.70	1915	18.8
February	21.2	65	1906	—20	1914	2.54	1.95	1909	18.6
March	32.0	80	1907	—4	1916	3.05	1.97	1913	14.6
April	44.2	84	1915	16	1911	2.58	1.46	1907	4.1
May	56.7	92	1911	26	1903	2.83	2.18	1916	0.5
June	64.4	90	1907	37	1910	3.68	2.36	1903	......
July	70.4	100	1911	46	1912	3.40	2.63	1915	......
August	67.6	97	1916	44	1909	3.29	2.05	1905	......
September	62.1	90	1913	33	1913	2.58	2.54	1915	......
October	50.8	85	1905	23	1904	2.80	1.87	1903	0.8
November	39.1	75	1909	9	1903	1.72	1.16	1912	6.4
December	27.3	64	1914	—12	1914	2.78	1.87	1904	18.3
Year	46.7	100	1911	—22	1914	34.02	2.63	1915	80.8

TOPOGRAPHY AND NATURAL CHARACTERISTICS

By far the larger part of the surface of Onondaga County slopes northward toward the St. Lawrence River, which receives most of its drainage. The portion drained southward lies mostly within the towns of Fabius and Tully. Nearly one-half of the county is level or very slightly rolling. That part of the county lying south of the old Erie Canal includes the northernmost spurs of the central Allegheny Mountains, and is hilly and broken by deep valleys. The highest points in the county are in the town of Fabius, 2,000 feet in height.

The geological formation of the county consists of alternate strata of shale and limestone underlying each other in nearly horizontal layers. Both limestone and gypsum were formerly quarried in large quantities. At the present time, however, the quarries are operated by the Solvay Process Company for use in their various enterprises and for the manufacture of ground limestone for agricultural purposes. A group of about 60 brine wells in the southern part is also operated by this company.

The streams of the county nearly all flow in a northerly direction, their waters flowing through Oswego River into Lake Ontario. Several small streams rise in the southern part of the county and form the head branches of Tioughnioga River. The principal lakes are Oneida, on the northeastern boundary, Onondaga and Cross lakes in the northern half, and Skaneateles and Otisco lakes among the hills in the south.

The soils of the county are almost wholly of glacial origin. The effect of the glacial epoch is clearly observed in the formation all along the Niagara escarpment. North of the escarpment huge boulders are found scattered through the rich, heavy clays and in some instances through the light, sandy loams. In the central and northern portions the marshes are covered with peat and muck formation of great fertility. One of these swamps is known as the Cicero Swamp, which occupies an extensive area in the northern part.

DESCRIPTION BY TOWNSHIPS

CAMILLUS: The surface is rolling, the ridges extending generally north and south. Ninemile Creek flows through the center, breaking through the Niagara escarpment at Martisco, bluffs rising from 100 to 200 feet high. The soil is a rich clayey and gravelly loam.

Products: Alfalfa, corn, oats, wheat, barley, cattle and dairy products.

Average values of farm land range from $75 to $125 an acre.

CICERO: The surface is level or slightly undulating. A fine ridge lies just south of the lake shore. The soil is a clayey and sandy loam. In the center and southeast there is an extensive swamp, large areas of which have been reclaimed, and include some of the most valuable land in the township.

Products: Cabbage, hay, corn, vegetables, buckwheat, and dairy products.

Average values of farm land range from $50 to $100 an acre.

CLAY: The surface is very flat, elevated but little above the level of Oneida River. Oneida River forms the northern boundary, and Seneca River the western. The soil is clayey or sandy loam. Large areas of excellent reclaimed land occupy portions of this town.

Products: Potatoes, cabbage, hay, corn, vegetables, tobacco and dairy products.

Average values of farm land range from $50 to $100 an acre.

DEWITT: The northern part is level, and the southern is broken and hilly. The hills are usually steep, their summits rising from 700 to 800 feet above sea level. Butternut Creek, which flows north, divides the highlands into two nearly equal ridges. The soil is sandy and clayey loam in the north, and gravelly loam in the south.

Products: Alfalfa, corn and other grain, cattle and dairy products.

Average values of farm land range from $50 to $250 an acre.

ELBRIDGE: The surface is level in the north and rolling in the south. Seneca River and Cross Lake form a portion of the northern boundary. Skaneateles Outlet flows through the western part and empties into Seneca River near the boundary line between Onondaga and Cayuga. The soil is a rich sandy and gravelly loam.

Products: Alfalfa, corn, potatoes, grain, beans and dairy products.

Average values of farm land range from $60 to $125 an acre.

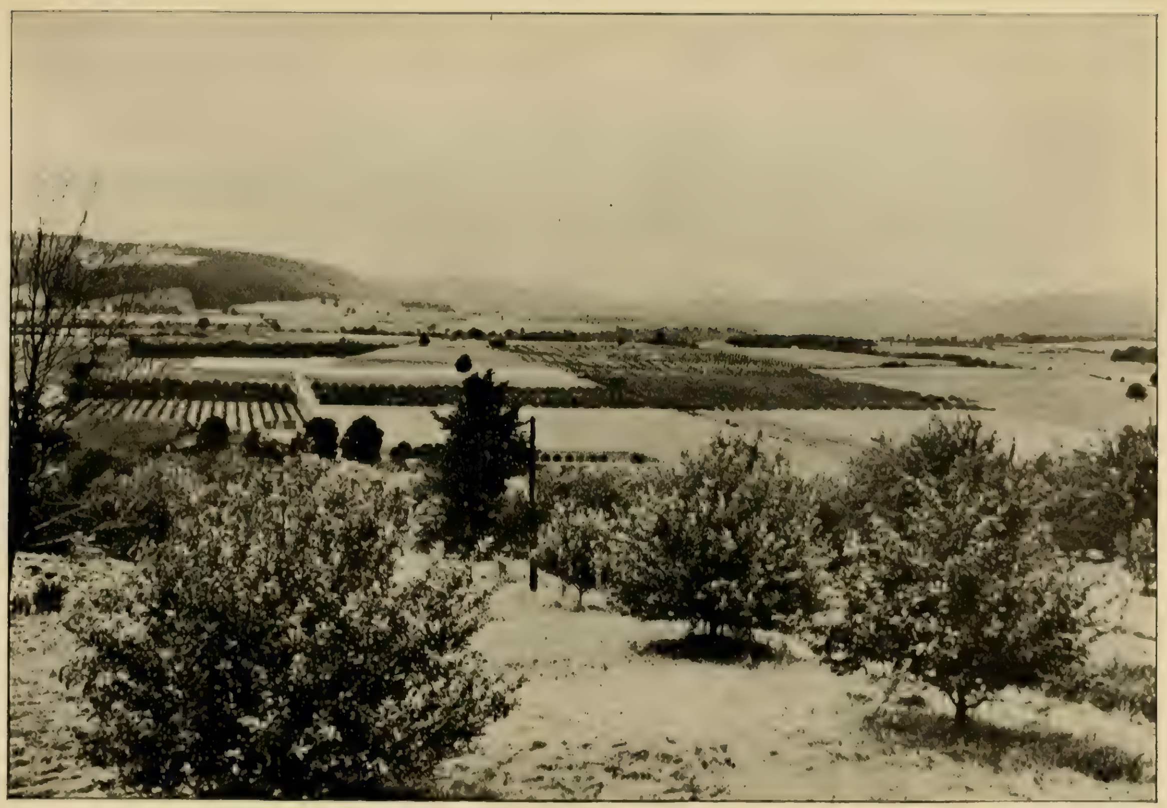


FIG. 110.—FRUIT ORCHARD OF 35,000 TREES, TOWN OF ONONDAGA

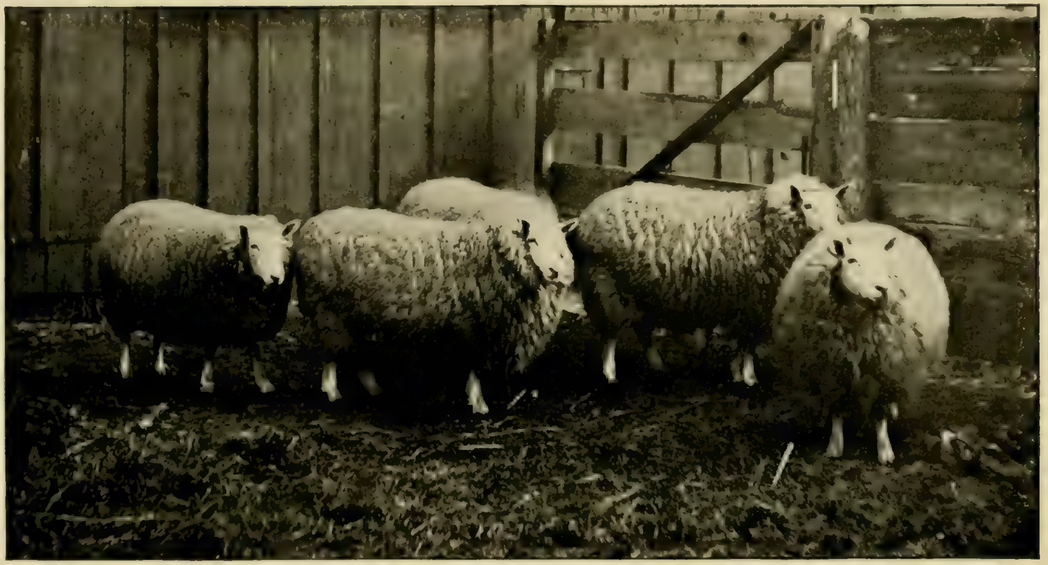


FIG. 111.— CHEVIOT EWES IN FARM FLOCK

FABIUS: This town has a general elevation of 1,000 to 1,200 feet above the Erie Canal at Syracuse. The surface of the southern half is broken by ridges extending north and south, and separated by narrow valleys. The central and northern parts are rolling or moderately hilly. The two highest points, Rowley and Brower Hills, in the southern part, are each about 2,000 feet high. The soil is generally a fine quality of gravelly loam, occasionally intermixed with clay and sand.

Products: Dairy products, hay, potatoes, corn and other grain, and sheep.

Average values of farm land range from $25 to $90 an acre.

GEDDES: The surface is level in the north and rolling in the south. Onondaga Lake lies on the east and Ninemile Creek flows easterly through the center. The soil is a clayey and sandy loam.

Products: Alfalfa, corn and other grain, and dairy products.

Average values of farm land range from $75 to $150 an acre.

LAFAYETTE: The surface is hilly and broken. Butternut Creek flows north through the eastern part and Onondaga through the west. The soil is generally a sandy and gravelly loam. The Onondaga Indian Reservation lies partly in the northern portion of this town.

Products: Alfalfa, hay, dairy products, sheep, grain and fruit.

Average values of farm land range from $30 to $100 per acre.

LYSANDER: The surface is level and somewhat swampy in the east, and gently rolling in the west. Seneca River forms its south and east boundaries, being known as the Oswego River below the outlet of Oneida Lake. The soil is a sandy, gravelly loam with occasional patches of clay.

Products: Dairy products, corn and other grain, potatoes. hay, tobacco and alfalfa.

Average values of farm land range from $60 to $125 an acre.

MANLIUS: The surface of the northern half is level and that of the southern half rolling and hilly. Limestone Creek flows through the center of the town in the north, receiving Butternut

Creek from the west, and emptying into Chittenango Creek. In this town, as well as in the town of DeWitt, there are small lakes known as the Green Lakes, showing remarkable formation. The banks are usually from 50 to 100 feet high, and the lakes from 100 to 200 feet deep. The waters at the bottom are heavily charged with hydrogen sulphide and have a distinctive bright green color in the sunshine. The soil is a deep fertile alluvium in the north, and a sandy and clayey loam in the south.

Products: Alfalfa, dairy products, fruit, corn and grain.

Average values of farm land range from $75 to $300 an acre.

MARCELLUS: The surface is a rolling upland broken by the valley of Ninemile Creek, which extends through the center. The soil is generally a clayey loam.

Products: Alfalfa, dairy products, fruit, sheep and corn.

Average values of farm land range from $50 to $100 an acre.

ONONDAGA: The surface is mostly a rolling and hilly upland separated into two ridges by the valley of Onondaga Creek. The east ridge is rocky and broken, while the west is generally smooth and rolling. A wide intervale extends along the creeks, and is bordered by steep hillsides 200 to 400 feet high. The soil in the valleys is a sandy, gravelly loam, and on the uplands a gravelly and clayey loam.

The Onondaga Indian Reservation lies partly in the southern part of this town.

Products: Alfalfa, dairy products, sheep, fruit, corn and hay.

Average values of farm land range from $50 to $125 an acre.

OTISCO: The surface is principally occupied by the high ridge between the valley of Onondaga Creek and Otisco Lake. The declivities of the hills are generally steep, the summits, which are rolling and elevated, rising from 1,400 to 1,700 feet above tide. Otisco Lake, which is 784 feet above tide, lies on the west border of the town in a valley 1,000 feet below the summits of the hills. Bear Mountain in the northwestern part is one of the principal elevations. The soil is generally a sandy or gravelly loam mixed with clay and well adapted to grazing.

Products: Dairy products, sheep, corn and grain.

Average values of farm land range from $25 to $90 an acre.

POMPEY: This town lies on the high rolling ridge between the east branch of Limestone Creek and Butternut Creek. The general ridge is divided by the valleys of the west branches of Limestone Creek. The streams that drain the southern part of the town flow in a southerly direction. The soil is a strong, clayey loam.

Products: Alfalfa, hay, dairy products, corn, grain and potatoes.

Average values of farm land range from $30 to $100 an acre.

SALINA: The surface is level or gently undulating. Along the course of Mud Creek and its tributary, Beartrap Creek, considerable swamp land has been reclaimed and now forms some of the best land in the town, which is used largely for garden crops. The soil is principally a sandy loam, with occasional patches of clay.

Products: Alfalfa, garden crops, grain and willows.

Average values of farm land range from $75 to $150 an acre.

SKANEATELES: The surface is rolling or moderately hilly. From Skaneateles Lake in the southern part of the town the land slopes up to a height of 200 to 500 feet. These highlands furnish a great number of beautiful sites for country residences. Skaneateles Outlet runs in a northerly direction across the northern part of the town. The soil is principally a clayey loam.

Products: Alfalfa, hay, dairy products, cabbage, corn, grain and teasels.

Average values of farm land range from $75 to $125 an acre.

SPAFFORD: The surface consists principally of a high ridge between Skaneateles and Otisco lakes, abruptly descending to the valleys on each side, and gradually declining toward the north. The soil is a clayey and gravelly loam.

Products: Dairy products, sheep, hay and grain.

Average values of farm land range from $25 to $75 an acre.

TULLY: The surface consists of a plateau in the center of the town, hills bordering the east and west. These hills are very steep and bleak. In the southwestern part of the central valley lie the Tully Lakes, in the immediate vicinity of which, and extending to the Cortland County line, there is considerable swamp land. The soil on this flat is sandy and clayey loam; on the hills it is clay.

Products: Corn, potatoes, dairy products and grain.

Average values of farm land range from $25 to $100 an acre.

VAN BUREN: The surface is level or gently undulating. Seneca River forms its northern boundary, along which is considerable low land. The ridges are gravelly, while the lower hills and valleys are either clay, sand or gravelly loam.

Products: Alfalfa, hay, dairy products, corn, grain and tobacco.

Average values of farm land range from $60 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

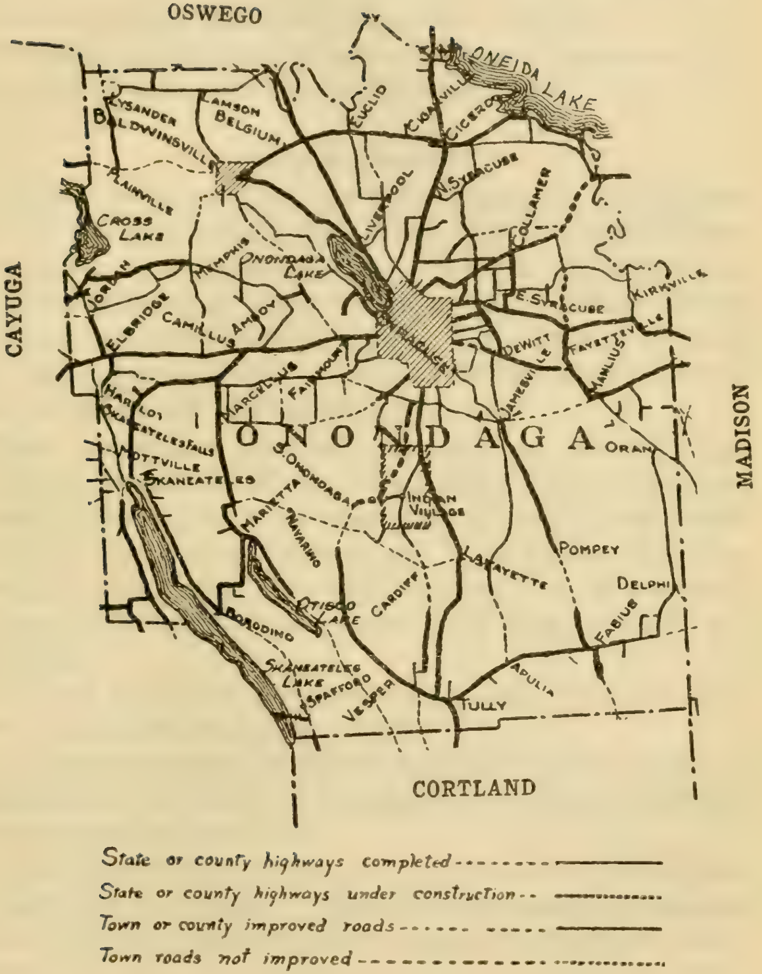
Three lines of the New York Central pass east and west through Onondaga County, centering at Syracuse, the Watertown branch entering the city from the north. The Delaware, Lackawanna and Western passes from Oswego through Syracuse south through the county, connecting with the Lehigh Valley at Cortland. The Marcellus and Otisco Lake Railway extends from Otisco Lake north to Martisco, where it connects with the New York Central. Skaneateles is also connected with the New York Central by means of the Skaneateles Railroad.

Electric Roads

Syracuse is entered by electric lines as follows: The West Shore from Utica on the east, and the Empire United Railways from South Bay or Oneida Lake on the northeast; from Oswego on the northwest, and from Rochester on the west. Additional lines extend from Auburn on the southwest and from Edwards Falls and Jamesville on the southeast.

Waterways

The Barke Canal passes east and west through the county, connecting at Liverpool with the Oswego Canal, which has also been deepened to accommodate large barges. The old Erie Canal crosses the center of the county, but is not navigable except for a short distance in the eastern part.


OSWEGO
Oneida Lake
Lysander
Lamson
Belgium
Baldwinsville
Euclid
Clay
Cicero
Plainville
Liverpool
N. Syracuse
Collamer
Cross Lake
Memphis
Onondaga Lake
Jordan
Elbridge
Camillus
Amboy
Syracuse
E. Syracuse
Kirkville
Fayetteville
Dewitt
Jamesville
Manlius
CAYUGA
Marcellus
Fairmount
Hartlot
Skaneateles Falls
Mottville
Skaneateles
ONONDAGA
Oran
MADISON
S. Onondaga
Marietta
Navarino
Indian Village
Pompey
Lafayette
Delphi
Cardiff
Otisco Lake
Borodino
Fabius
Skaneateles Lake
Spafford
Vesper
Apulia
Tully
CORTLAND
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Improved Highways

State and county highways centering at Syracuse traverse nearly all sections of the county and form direct routes to Rochester, Oswego, Watertown, Utica, Albany, New York, Cortland, Ithaca and Auburn and other points west to Buffalo.

Onondaga County has 204 miles of completed improved highways, and 19 miles additional under construction.

AVAILABLE MARKETS

Syracuse is the principal market. This city is an important railroad and canal center, the railroad yards at East Syracuse being among the largest in the world. There are important manufacturing interests, of which the largest is the Solvay Process Company with over 3,000 employees. This company is one of three making use of a secret process for the manufacture of soda both for baking and washing purposes.

Other well-known manufacturing firms are the following: Franklin Automobile Works; John Deere Plow Company; Pierce, Butler & Pierce (heating systems); the Halcomb Steel Company; two pottery factories; the L. C. Smith Typewriter Company; and several large gear factories. The Merrill-Soule Company are extensive manufacturers of powdered milk and mincemeat.

Syracuse is the seat of Syracuse University, one of the well-known institutions for higher education.

The State Institution for Feeble Minded Children is located at Syracuse, and the county of Onondaga has recently established a tuberculosis sanitarium.

A large part of the milk produced is sold as market milk either in New York or Syracuse. About 800,000 pounds of creamery butter and nearly one-half million pounds of cheese are manufactured.

There are nine canning factories within the county.

The agricultural organizations are as follows:

Baldwinsville Milk Company, Inc.
Clay Milk Producers' Association, Inc.
Granges: Pomona and 33 subordinate granges.
Granby Seed Potato Association.
Onondaga County Beekeepers' Society.

Onondaga County Dairymen's League.
Onondaga County Farm Bureau Association.
Onondaga County Fruit Growers' Association.
Onondaga County National Farm Loan Association.
Onondaga County Potato Growers' Association.
Onondaga County Sheep Breeders' Cooperative Association, Inc.
Onondaga Guernsey Club.
Onondaga Milk Producers' Cooperative Association, Inc.
Otisco Cooperative Association, Inc.
Pleasant Valley Cooperative Creamery Association, Inc.

EDUCATIONAL FACILITIES

At Syracuse is located Syracuse University, which includes the State College of Forestry and the Joseph Slocum College of Agriculture.

Schools registered as having facilities suitable for maintaining high school and academic departments located as follows: Baldwinsville, Camillus, East Syracuse, Eastwood, Elbridge, Fabius, Fayetteville, Jamesville, Jordan, LaFayette, Liverpool, Lysander, Manlius, Marcellus, Minoa, North Syracuse, Onondaga Valley, Pompey, Skaneateles, Solvay, Syracuse (2), Tully and Warner.

An approved course in agriculture is given at Jordan.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	437,658 acres
Number of farms	5,770
Per cent of farm land improved	82.8

LIVE STOCK PRODUCTS

Milk sold	12,485,066 gal.
Cream sold	33,755 gal.
Butter fat sold	1,392,198 lbs.
Butter produced	411,418 lbs.
Cheese produced	21,895 lbs.
Eggs produced	1,785,684 doz.
Wool produced	9,818 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	17,128
Cattle	59,082
Sheep	17,284
Swine	21,453
Poultry	302,764

BEES

	Number
Number of colonies	3,979

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	19,393	707,385 bu.
Oats	38,775	1,127,012 bu.
Wheat	7,556	173,499 bu.
Barley	6,295	166,274 bu.
Buckwheat	3,551	82,839 bu.
Rye	688	11,594 bu.
Hay and forage	114,487	215,059 tons
Special Crops:		
Potatoes	13,794	1,671,835 bu.
Vegetables, other than potatoes	8,525	....
Dry edible beans	245	3,038 bu.
Dry peas	74	925 bu.
Fruits:		
Apples	202,140 trees	282,411 bu.
Peaches and nectarines	6,409 trees	2,933 bu.
Pears	13,900 trees	11,959 bu.
Plums and prunes	20,226 trees	11,066 bu.
Cherries	25,932 trees	8,593 bu.
Quinces	448 trees	116 bu.
Grapes	47,149 vines	630,767 lbs.
Small fruits	359 acres	862,253 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	5,628	5,657

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	16,061	14,973
Cattle	49,932	48,608
Sheep	11,809	9,562
Swine	13,093	12,536
Poultry	245,519	238,635

BEES

	1917 Number	1918 Number
Number of colonies	4,501	3,865

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	12,752	10,985	281,088 bu.
Oats	30,717	28,222	850,842 bu.
Barley	6,602	7,051	176,309 bu.
Buckwheat	4,463	4,314	73,563 bu.
Wheat (winter)	10,175	11,553	279,877 bu.
Wheat (spring)	319	587	10,099 bu.
Rye	481	652	9,598 bu.
Hay and Forage:			
Alfalfa	38,279	35,729	79,382 tons
Other hay	74,209	75,918	109,003 tons
Corn (ensilage)	12,630	11,977	85,649 tons
Corn (fodder)	....	2,801	....
Special Crops:			
Field beans	2,282	3,012	20,488 bu.
Cabbage	4,147	4,873	27,784 tons
Potatoes	10,346	11,438	1,232,432 bu.
Roots raised for stock food	....	419	....
Canning factory crops	1,064	1,110	....
Other vegetables and garden crops	2,265	2,589	....
Fruits:			
Apples	6,489	7,137	112,208 bu.
Peaches	172	74	794 bu.
Pears	280	234	4,374 bu.
Plums	132	159	38.577 lbs.
Cherries	605	437	172,953 lbs.
Quinces	....	2	62 bu.
Vineyard	161	122	237,595 lbs.
Small fruits	529	521	....

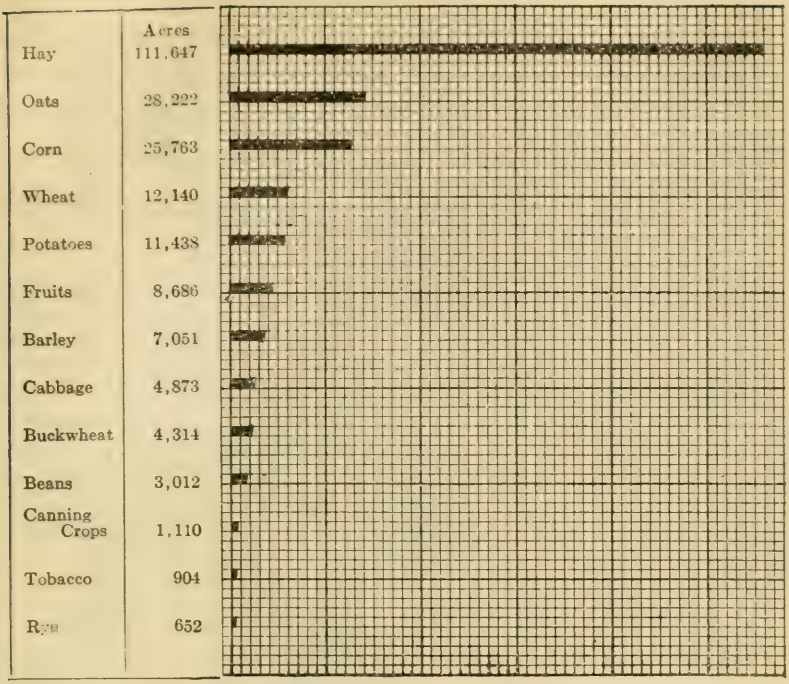


FIG. 112.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN ONONDAGA COUNTY

ONTARIO COUNTY

This county lies in the west central part of the state on the northwest shore of Seneca Lake. It has an area of 415,360 acres. From north to south it extends approximately 30 miles, and from east to west 30 miles.

The population is distributed as follows:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Canandaigua (city) *	7,501	Naples	2,285
Geneva (city)	13,232	Phelps	4,891
Bristol	1,143	Richmond	1,208
Canadice	556	Seneca	3,001
Canandaigua	2,140	South Bristol	964
East Bloomfield	1,975	Victor	2,617
Farmington	1,585	West Bloomfield	1,203
Geneva	1,386		
Gorham	2,114	Total	54,628
Hopewell	1,416		
Manchester	5,411		

---

* Canadaigua is the county seat.

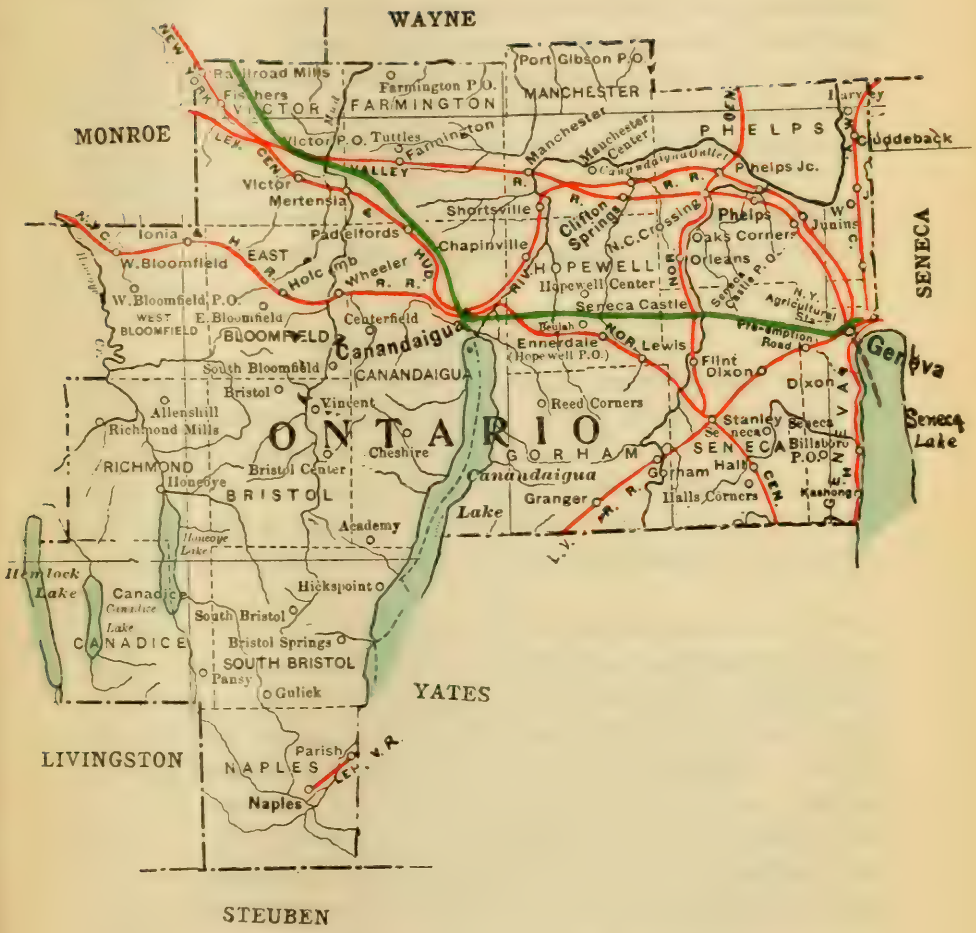
NOTE: Geneva now has a population of 14,600.

HISTORICAL ASSOCIATIONS

Ontario County was formed from Montgomery in 1789, and named from Lake Ontario, which then formed its northern boundary. The word is of Iroquois origin, and signifies "great or beautiful lake." Since the organization of the county, Steuben, Genesee, and Yates, and parts of Monroe, Livingston, and Wayne have been taken off.

The territory lying within the limits of this county was the chief seat of the Senecas, whose principal village was Kanadesaga, or Geneva. In 1687 a body of French and Indians invaded the Seneca country by way of the St. Lawrence and Lake Ontario, when a battle took place near the site of the present village of Victor.

During Sullivan's expedition many large orchards were destroyed, also Indian villages on the present sites of Geneva and Canandaigua. These sites were afterwards selected by Phelps and Gorham for the location of settlements by the whites. At Canan-


WAYNE
MONROE
SENECA
YATES
LIVINGSTON
STEUBEN
ONTARIO
VICTOR
FARMINGTON
MANCHESTER
PHELPS
EAST BLOOMFIELD
WEST BLOOMFIELD
CANANDAIGUA
HOPEWELL
SENECA
GORHAM
RICHMOND
BRISTOL
CANADICE
SOUTH BRISTOL
NAPLES
Railroad Mills
Fishers
Victor P.O.
Victor
Mertensia
Farmington P.O.
Tuttles
Farmington
Port Gibson P.O.
Manchester
Manchester Center
Canandaigua Outlet
Phelps Jc.
Harvey
Cuddeback
Shortsville
Clifton Springs
N.C. Crossing
Phelps
Oaks Corners
Orleans
Junius
Ionia
W. Bloomfield
W. Bloomfield P.O.
E. Bloomfield
Padelfords
Holcomb
Chapinville
Hopewell Center
Seneca Castle
Centerfield
Canandaigua
Beulah
Ennerdale
(Hopewell P.O.)
Lewis
Flint
Dixon
N.Y. Agricultural Sta.
Pre-emption Road
Geneva
Seneca Lake
South Bloomfield
Bristol
Vincent
Allenshill
Richmond Mills
Reed Corners
Stanley
Seneca
Billsboro P.O.
Cheshire
Bristol Center
Honeoye
Honeoye Lake
Gorham
Hall
Halls Corners
Kashong
Granger
Canandaigua Lake
Academy
Hemlock Lake
Canadice
Canadice Lake
Hickspoint
South Bristol
Bristol Springs
Pansy
Gulick
Parish
Naples
NEW YORK CEN.
LEH. VALLEY R. R.
N.Y. CEN. R. R.
HUD. R. R.
RIV. R. R.
WHEELER R. R.
HOLCOMB
N.Y. CEN.
NOR. CEN.
L. V. R. R.
LEH. V. R.
SENECA CASTLE R. R.

Map of Ontario County, Showing Townships

Red, railroads; green, electric roads; brown, canals

daigua was established the first land office in America. Joseph Smith, the founder of Mormonism, was the first actual settler at this place.

The most substantial early development took place under the leadership of Charles Williamson. Settlers came from New England, Maryland, Virginia, Pennsylvania, and eastern New York; he also induced immigration from England and Scotland, as well as a few of Irish origin. In the town of Farmington the pioneer settlers were Friends, or Quakers.

After roads were opened, connecting this section with the eastern part of the state, settlement and development increased with great rapidity.

DEVELOPMENT OF INDUSTRY

Wheat was for many years the staple crop of Ontario County, but later attention was gradually turned to the production of the coarser grains, to stock growing, and to the cultivation of fruits. Corn was one of the principal crops. At the present time corn, as well as barley, is extensively raised, the county standing second in the state in 1918 in the production of these two grains.

Most of the early settlers brought sheep and cattle with them. There were more cows kept during the first half century of the development of the county than at any later period. Since 1840 the number has gradually diminished. The fine Merino sheep were introduced at an early period, and in the number of sheep kept Ontario has been one of the leading counties, ranking second at the present time. Although since 1840 the number of sheep has gradually decreased, the amount of wool produced has become greater, showing that sheep of the better wool-growing strains have been selected. Large portions of the townships of Bristol, South Bristol, Richmond, Canadice, and Naples are especially suited to this form of animal husbandry.

The importance of Ontario County as a fruit-producing county is shown by the fact that for the year 1899 the total value of all fruits produced, together with nursery stock, amounted to $960,396, or approximately one-fifth of the income from all products of the soil. The steep hillsides bordering Canandaigua

Lake, particularly near Naples, have for many years been utilized for the production of grapes. Hop growing, which was of some prominence during the latter half of the last century, is no longer mentioned as an important crop, except in the vicinity of Bristol Center. Cabbage is largely raised, and, according to the census of 1918, Ontario County leads in its production.

CLIMATE AND RAINFALL

The climatological records here given for Ontario County were taken at Shortsville by C. H. Latting at an elevation of 660 feet.

Average dates for the last killing frost in spring and the first in fall are May 7 and October 19, respectively, giving a growing season of 165 days.

The following table, compiled from observations covering the period 1899 to 1916, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT ROCHESTER

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	24.8	70	1906	—15	1907	1.79	1.67	1904	8.7
February.....	21.5	66	1906	—16	1914	1.54	1.42	1915	9.6
March........	32.9	84	1910	—5	1911*	2.21	2.75	1900	6.3
April.........	44.4	88	1915	15	1911	2.73	1.47	1910	1.9
May..........	56.7	90	1911	24	1903	2.73	1.53	1912	0.3
June..........	65.2	93	1901	35	1910	3.18	2.29	1908	......
July...........	70.2	102	1911	44	1912	3.83	1.91	1906	......
August........	67.9	96	1900	43	1907*	3.07	2.26	1914	......
September....	62.7	96	1900	34	1905*	2.52	2.08	1915	......
October.......	51.5	86	1900*	21	1899	2.56	1.46	1907	0.5
November....	39.0	75	1909	9	1903	1.75	1.63	1900	3.3
December.....	27.8	66	1908	—6	1910	1.85	1.31	1904	8.9
Year..........	47.0	102	1911	—16	1914	29.76	2.75	1900	39.5

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

Ontario County lies on the extreme northern declivities of the central Allegheny Mountain range, and has a northerly inclination. The southern portion, lying west of Canandaigua

Lake, is a hilly and broken region divided into ridges. These ridges have a general north and south direction, terminating in the north in a rolling region. This rolling region embraces all of the county east and north of Canandaigua Lake, also that portion lying west of the lake and north of the northern line of Bristol. The ridges in this section gradually rise to a height of from 20 to 250 feet above the valleys. A terrace with declivities 100 to 250 feet high, descending toward the north, extends through the northern portions of East and West Bloomfield and the southern part of Victor at right angles to the general range of the ridges.

The highest point in the county, Gannett Hill, is located just west of Bristol Springs. Its height above sea level is 2,256 feet. The extreme northern parts of the county are occupied by drift ridges similar to those in Wayne and Seneca counties. A limestone ridge extends across the county through the towns of Phelps, Manchester, and Victor.

The county is drained by the Honeoye Outlet, a tributary of the Genesee River, and by the Canandaigua Outlet and Mud Creek, tributaries of the Clyde River, and finally through the St. Lawrence. A small portion of the southeast corner of Naples is finally drained through Chesapeake Bay. Canandaigua Lake lies almost wholly within the limits of the county. Except near the head of the lake, where the shores rise in steep bluffs from 300 to 800 feet, the land slopes gradually down to the water.

Honeoye, Canadice, and Hemlock lakes are smaller bodies of water, each surrounded by bluffs and hills rising to a height of 500 to 700 feet above them.

The soil generally consists of silty, sandy, and gravelly loam formed from the drift deposits. In the valleys and the rolling region that extends through the central and northern parts of the county the loam is very deep and rich. On the hills in the southern part the soil is made up principally of disintegrated shale and slate, forming a fine, fertile grazing region. On the drift hills in the west are some small sections covered with a deep, light sand, moderately productive. Muck deposits are scattered throughout the county to a considerable extent.

DESCRIPTION BY TOWNSHIPS

BRISTOL: The surface consists of a series of ridges gradually declining toward the north. These ridges are divided by the deep valleys of Mill and Mud creeks. The elevations vary from 1,200 to 1,800 feet, the highest points being in the southern part. The soil is a rich alluvium in the valleys and disintegrated slate and shale among the hills.

Products: General farm crops.

Average values of farm land range from $25 to $75 an acre.

CANADICE: The surface consists of a high, broken upland separated into two ridges by Canadice Lake. The west ridge, known as Bald Hill, has steep slopes, while the eastern ridge has gradually sloping hillsides. The highest summits are about 2,100 feet above sea level. The principal streams are the Canadice Inlet and Outlet and Honeoye Inlet. The soil in the valleys is a clayey loam. On the slopes it is mostly disintegrated shale and slate, while the summits in the southern part are largely covered with gravelly loam and black muck.

Products: Hay and grain.

Average values of farm land range from $20 to $75 an acre.

CANANDAIGUA: The surface is hilly in the south, but level or gently rolling in the north. The highest summits are about 1,200 feet above sea level. Canandaigua Lake extends through the southeastern part, and its outlet is the principal stream. In the north the soil is a silty clay loam; in the south it is a deep gravelly loam.

Products: General farm crops and fruit.

Average values of farm land range from $75 to $125 an acre.

EAST BLOOMFIELD: The surface is rolling, with a gentle inclination toward the north. The ridges rise from 800 to 1,200 feet above sea level. Mud Creek flows through the eastern part and Gates Creek through the western part. The soil is a deep, fertile, gravelly loam mixed with clay in some sections.

Products: General farm crops.

Average value of farm land ranges from $75 to $125 an acre.

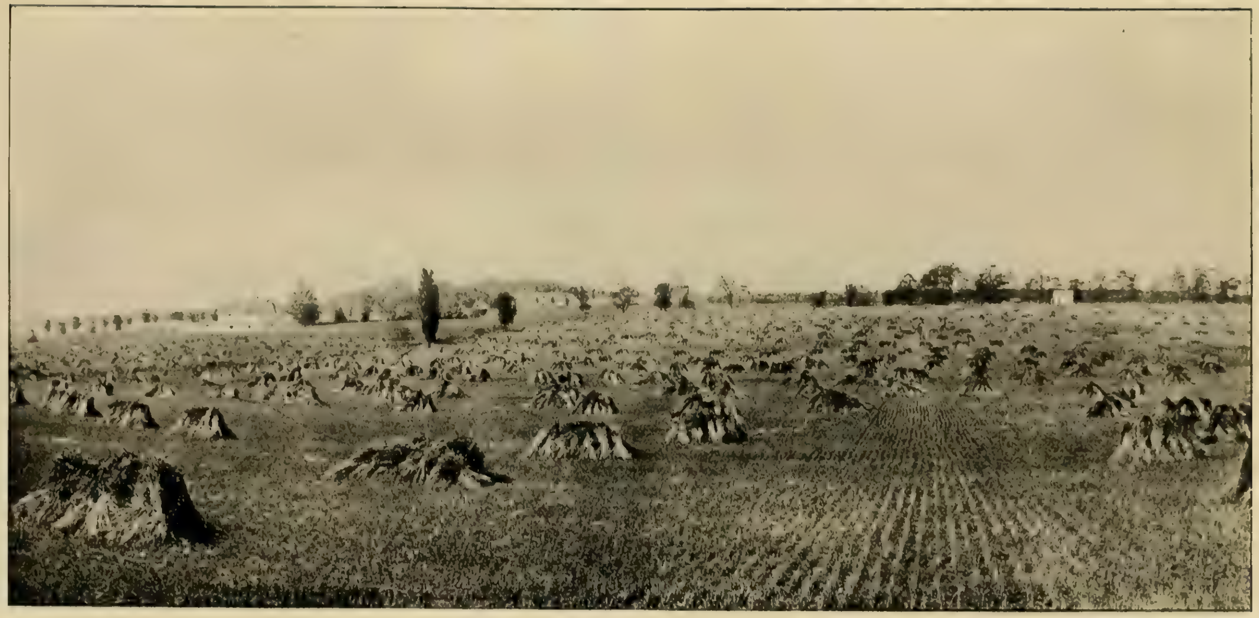


FIG. 113.—AN ONTARIO COUNTY WHEAT CROP

FARMINGTON: The surface is nearly level in the south; in the north it is broken by drift ridges rising from 50 to 100 feet above the surrounding level. The slopes on the north, east, and west of these ridges are generally steep, but more gradual toward the south. The principal streams are Mud and Black creeks and Black Brook. Astrip of land across the southern part has a silty clay soil. North of this is a marshy region, and still further north the soil is a gravelly loam and very productive.

Products: Hay, grain, and general farm crops.

Average values of farm land range from $75 to $125 an acre.

GENEVA: The surface is rolling. Along the lake are bluffs rising about 700 feet above sea level. The principal streams are Wilson Creek and White Spring Brook. Seneca Lake forms the eastern boundary. The soil is a deep, rich loam consisting of a mixture of sand, gravel, and silty loam.

Products: Fruit and general farm crops.

Average values of farm land range from $75 to $150 an acre.

GORHAM: The surface is rolling, the ridges rising in gradual slopes to about 1,000 feet above sea level. Flint Creek and Deep Run are the principal streams. West River flows through the southwestern part. In the eastern part the soil is principally a gravelly loam; in the west it is silty clay and generally fertile and productive.

Products: Fruit, cabbage, and general farm crops.

Average values of farm land range from $75 to $150 an acre.

HOPEWELL: The surface is level or gently undulating, with a northerly inclination. Canandaigua Outlet is the largest stream. Fish Creek and Spring Brook also flow through the town. The soil is a sandy and gravelly loam in the center and east, with a mixture of clay in the west and a silty clay loam in the south.

Products: Fruit, cabbage, and general farm crops.

Average values of farm land range from $75 to $150 an acre.

MANCHESTER: The surface is nearly level in the south, with irregular sand and gravel ridges of drift formation in the north.

Canandaigua Outlet is the principal stream. Black and Fall brooks also flow through the town. The soil is a gravelly loam.

Products: General farm crops.

Average values of farm land range from $75 to $125 an acre.

NAPLES: The surface is largely a hilly upland, broken by the deep narrow valleys of Canandaigua and Honeoye inlets. The summits of the hills rise from 1,500 to 2,000 feet above sea level. The soil on the hills is clay and gravel, mixed with disintegrated slate and shale. In the valleys it is a rich gravelly loam mixed with alluvium.

Products: Grapes, potatoes, dairy products, and general farm crops.

Average values of farm land range from $25 to $125 an acre.

PHELPS: The surface is rolling, the ridges rising in gentle slopes from 500 to 700 feet above sea level. Canandaigua Outlet, the principal stream, flows east and north through the center. Flint Creek also flows through the town. Sandy loams predominate, with mixtures of gravel.

Products: Cabbage, fruit, potatoes and general farm crops.

Average values of farm land range from $75 to $175 an acre.

RICHMOND: A wide valley occupies the center of the town, opening toward the north and surrounded on other sides by hills 800 to 1,200 feet high. The southern strip is very hilly, the highest summits rising about 1,600 feet above sea level. Honeoye and Hemlock outlets are the principal streams. In the lowlands the soil is largely clay, and on the hills it is a sandy loam mixed with clay.

Products: Potatoes, hay and grain.

Average values of farm land range from $20 to $75 an acre.

SENECA: The surface is a fine rolling country, the ridges rising from about 600 to 1,000 feet. The soil is a deep, rich loam, consisting of a mixture of sand, gravel, and clay, gravel predominating on the ridges.

Products: Fruit, general farm crops and cabbage.

Average values of farm land range from $75 to $175 an acre.

SOUTH BRISTOL: The surface is an elevated upland divided into four sections by the valleys of small streams. The highest summits are about 2,000 feet above sea level, and the slopes are quite steep. Canandaigua Lake forms the eastern boundary. The soil is largely silty or shaly loams.

Products: General farm crops.

Average values of farm land range from $25 to $75 an acre.

VICTOR: The northern part of this town is occupied by drift ridges rising about 800 feet above sea level. A ridge 100 to 280 feet in height extends across the southern part. Fish and Ganargua creeks flow through the eastern part. The soil in the center and north is a light sandy and gravelly loam, but in the southeast it is principally silty clay loam.

Products: Potatoes, grain, fruit and general farm crops.

Average values of farm land range from $50 to $125 an acre.

WEST BLOOMFIELD: The surface is gently undulating, with a ridge 200 to 300 feet high extending across the northern part. The soil is a deep, rich, gravelly loam mixed with clay.

Products: General farm crops.

Average values of farm land range from $50 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The first railroad in the county, namely, the Auburn branch of the New York Central, was opened between Geneva and Rochester. This line passes through Canandaigua, from which place another New York Central line extends west to Batavia and Buffalo. A New York Central line also extends from the main line at Lyons south along the east border of Ontario County through to Pennsylvania.

The Lehigh Valley from the east and south passes from Geneva through the northern tier of towns west to Buffalo, a branch running to Rochester. The towns of Geneva, Seneca, and Gorham are served by a Lehigh Valley line running from Geneva to Naples in Ontario County.

The Northern Central, which is operated by the Pennsylvania Railroad, extends north and south through Phelps and Seneca, running to Sodus Point on Lake Ontario and south through Penn Yan into Pennsylvania. At Stanley, where it connects with the Lehigh Valley, a branch extends northwest to Canandaigua.

Electric Roads

An electric line crosses the county from Geneva west through Canandaigua and northwest to Rochester. Another electric line extends from Geneva east through Seneca County.

Improved Highways

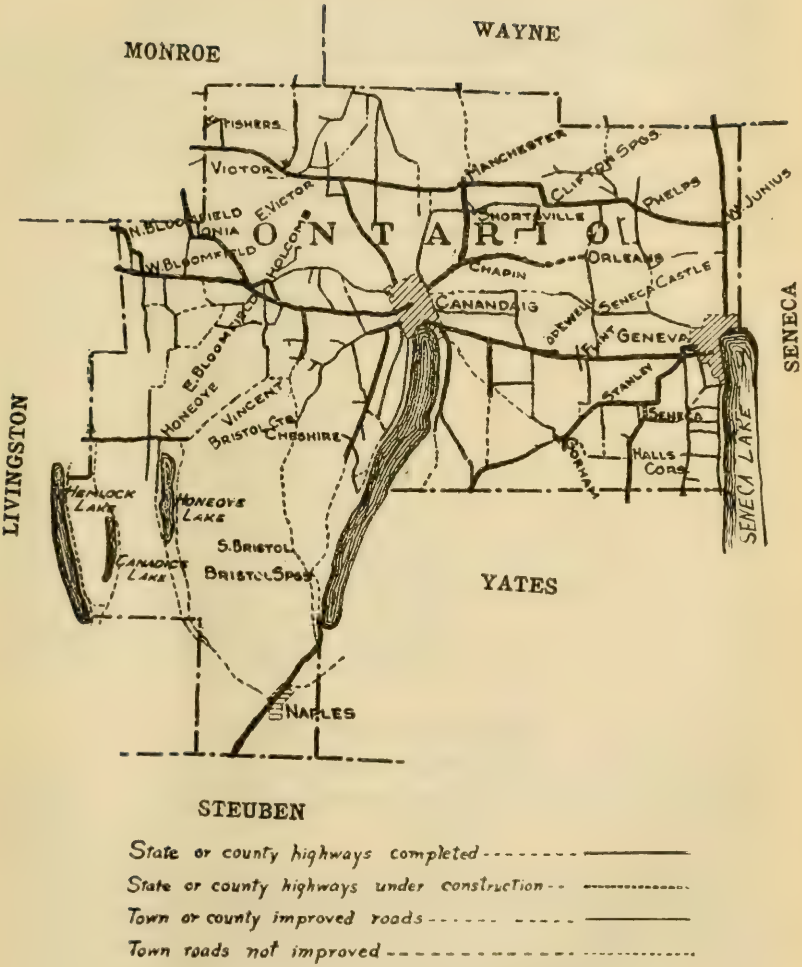
Being on the main road from Albany to Buffalo, Geneva and Canandaigua have connections with all the large cities east and west. Two improved highways lead direct from Canandaigua to Rochester, one of which runs to Batavia and Buffalo, branching at East Bloomfield to the north; the second, which starts northwest from Canandaigua, forms a junction with a road passing through all the northern towns. This latter road meets, near the east side of the county, an improved highway running between Lyons and Geneva.

From Geneva improved highways lead direct to Canandaigua and Penn Yan, the latter road passing through the village of Seneca. At this point a road extends southwest through Gorham to Rushville. Three short sections of improved highways extend south from the main road — the first through the town of Bloomfield, the second through Canandaigua, and the third through Hopewell and Gorham.

There are in the county a total of 134 miles of completed improved highways with 13 miles additional under construction.

AVAILABLE MARKETS

Ontario County generally has easy access to markets. The two centers of population, Geneva and Canandaigua, are excellent local markets. Geneva is in the center of a fruit-growing district, and several large nurseries are located at this place. It is also the seat of Hobart College and the New York State Agricultural Experiment Station.


WAYNE
MONROE
FISHERS
VICTOR
MANCHESTER
CLIFTON SPGS.
PHELPS
JUNIUS
E. VICTOR
N. BLOOMFIELD
IONIA
O N T A R I O
HOLCOMB
SHORTSVILLE
W. BLOOMFIELD
CHAPIN
ORLEANS
SENECA CASTLE
CANANDAIG
SENECA
GENEVA
FLINT
HOPEWELL
E. BLOOMFIELD
HONEOYE
VINCENT
BRISTOL CTR
CHESHIRE
STANLEY
SENECA
GORHAM
HALLS CORS
LIVINGSTON
HEMLOCK LAKE
HONEOYE LAKE
CANADICE LAKE
S. BRISTOL
BRISTOL SPGS
YATES
SENECA LAKE
NAPLES
STEUBEN
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Canandaigua, the county seat, is located on Canandaigua Lake, and is noted as a pleasure resort. It has important manufactories of enamelled ware and tin goods.

Ontario County has direct railroad connection with Syracuse, Rochester and Buffalo, and also with the more distant markets of New York, Boston, Philadelphia, Baltimore, Washington, and the coal-mining towns of eastern Pennsylvania.

The milk produced in Ontario County is sold principally as market milk in the cities of Geneva and Rochester.

There are five canning factories within the county.

The agricultural organizations are as follows:

East Bloomfield Farmers' Club.
Gorham Agricultural Society.
Granges: Pomona and twenty-one subordinate granges.
Hemlock Lake Union Agricultural Society.
Ionia Growers' Association.
Naples Union Agricultural Society.
Ontario County Agricultural Society.
Ontario County Beekeepers' Society.
Ontario County Canning Crop Growers' Association.
Ontario County Dairymen's League.
Ontario County Farm Bureau Association.
Ontario County Fruit Growers' Association.
Ontario County Sheep Growers' Cooperative Association, Inc.
Ontario National Farm Loan Association.
Rochester National Farm Loan Association.
Seneca National Farm Loan Association.

EDUCATIONAL FACILITIES

Geneva is the seat of Hobart and William Smith colleges. Approved courses in agriculture and home making are given at Canandaigua.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Canandaigua, Clifton Springs, East Bloomfield, Geneva, Honeoye, Manchester, Naples, Phelps, Shortsville, Victor, and West Bloomfield.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	387,069 acres
Number of farms	4,416
Per cent of farm land improved	82.6

LIVE STOCK PRODUCTS

Milk sold	1,186,382 gal.
Cream sold	15,482 gal.
Butter fat sold	837,855 lbs.
Butter produced	580,405 lbs.
Cheese produced	840 lbs.
Eggs produced	1,457,345 doz.
Wool produced	41,352 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	15,620
Cattle	23,019
Sheep	67,502
Swine	17,035
Poultry	243,068

BEES

Number of colonies	4,091

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	18,633	593,169 bu.
Oats	41,304	1,365,407 bu.
Wheat	21,432	532,138 bu.
Barley	5,957	159,584 bu.
Buckwheat	1,908	31,368 bu.
Rye	2,987	51,700 bu.
Hay and forage	72,523	93,364
Special Crops:		
Potatoes	14,857	1,642,755 bu.
Vegetables, other than potatoes	9,426	....
Dry edible beans	9,195	113,303 bu.
Dry peas	83	1,419 bu.
Fruits:		
Apples	369,050 trees	913,214 bu.
Peaches and nectarines	56,495 trees	37,505 bu.
Pears	74,451 trees	45,927 bu.
Plums and prunes	52,603 trees	32,761 bu.
Cherries	36,394 trees	28,374 bu.
Quinces	6,998 trees	3,289 bu.
Grapes	1,831,644 vines	11,155,951 lbs.
Small fruits	2,182 acres	2,903,359 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,005	3,695

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	14,604	13,078
Cattle	23,012	21,610
Sheep	52,750	35,219
Swine	14,849	13,049
Poultry	237,640	200,798

BEES

	1917 Number	1918 Number
Number of colonies	3,395	3,137

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	13,152	12,425	415,626 bu.
Oats	26,070	28,454	1,048,367 bu.
Barley	6,178	8,203	227,581 bu.
Buckwheat	2,722	2,393	33,616 bu.
Wheat (winter)	29,194	29,830	683,175 bu.
Wheat (spring)	443	246	5,371 bu.
Rye	2,473	2,837	50,123 bu.
Hay and Forage:			
Alfalfa	11,594	9,133	19,155 tons
Other hay	61,598	55,798	79,773 tons
Corn (ensilage)	3,047	2,257	15,882 tons
Corn (fodder)	....	1,592	....
Special Crops:			
Field beans	13,970	13,884	82,353 bu.
Cabbage	4,580	6,070	57,828 tons
Potatoes	9,284	10,916	1,027,372 bu.
Roots raised for stock food	....	346	....
Canning factory crops	2,167	2,141	....
Other vegetables and garden crops	1,339	1,681	....
Fruits:			
Apples	13,494	14,283	311,992 bu.
Peaches	1,144	1,414	24,471 bu.
Pears	1,279	1,250	43,311 bu.
Plums	566	473	623,728 lbs.
Cherries	773	675	406,583 lbs.
Quinces	....	68	735 bu.
Vineyard	1,869	1,805	3,148,732 lbs.
Small fruits	1,595	1,766	....

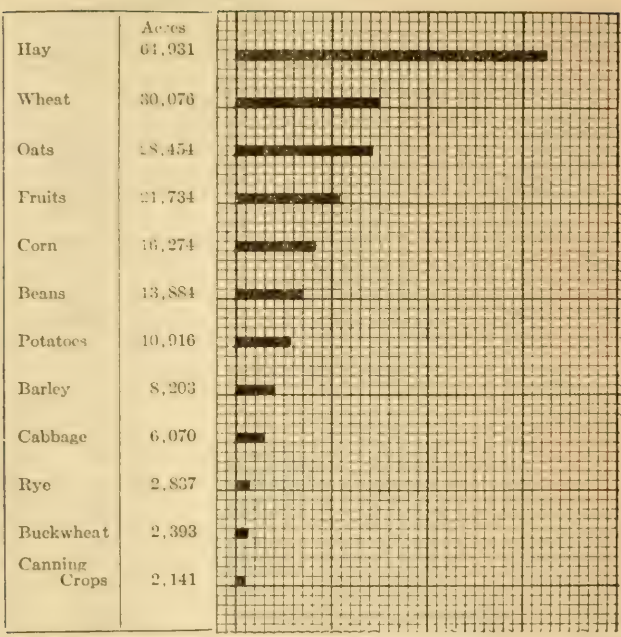
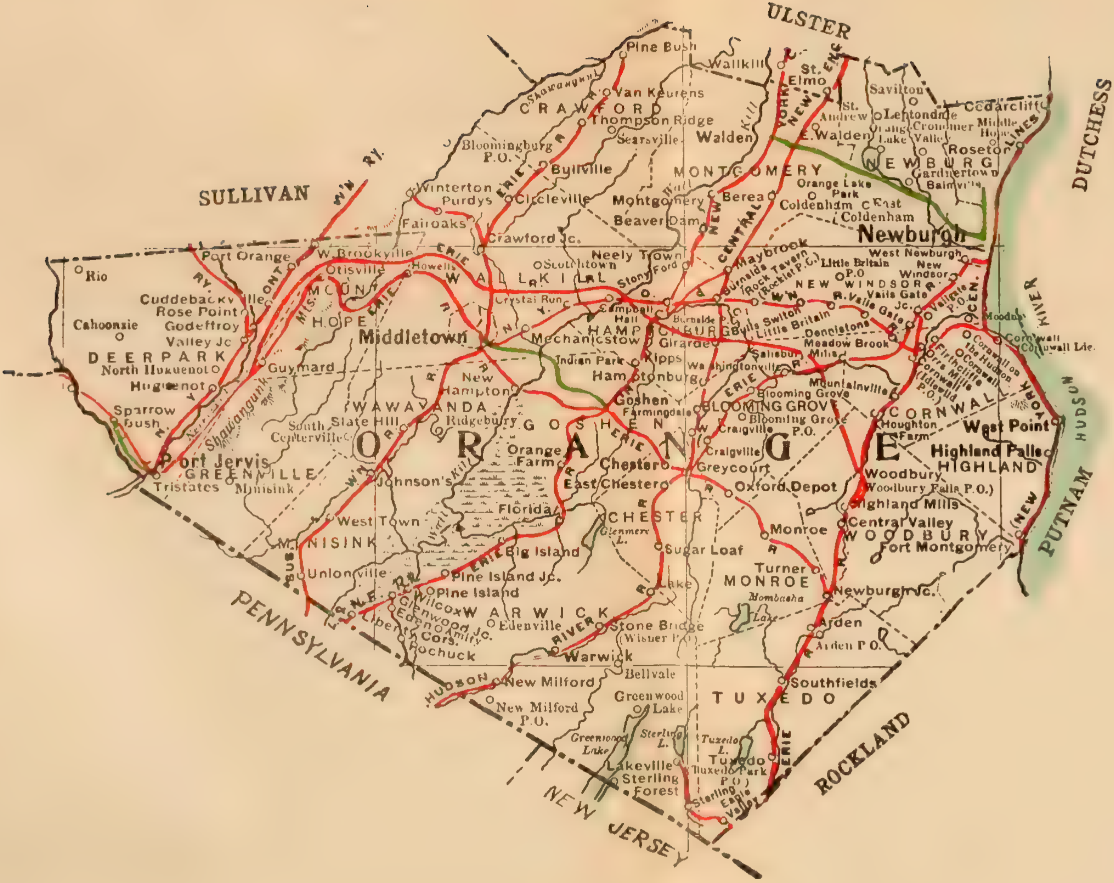


Fig. 114.— Chart Showing Relative Acreage of Crops in Ontario County


ULSTER
DUTCHESS
SULLIVAN
PENNSYLVANIA
NEW JERSEY
ROCKLAND
PUTNAM
HUDSON
RIVER
O R A N G E
CRAWFORD
MONTGOMERY
NEWBURG
NEW WINDSOR
WALLKILL
HAMPTONBURG
MOUNT HOPE
DEERPARK
GREENVILLE
WAWAYANDA
GOSHEN
BLOOMING GROVE
CORNWALL
HIGHLAND
WOODBURY
CHESTER
MINISINK
WARWICK
MONROE
TUXEDO
Pine Bush
Van Keurens
Thompson Ridge
Searsville
Walden
Wallkill
St. Elmo
E. Walden
St. Andrew
Savilton
Leptondale
Orange Lake
Cronomer Valley
Cedarcliff
Middle Hope
Roseton
Gardnertown
Balmville
Orange Lake Park
Coldenham
East Coldenham
Newburgh
West Newburgh
Little Britain P.O.
New Windsor
Vails Gate
Vails Gate Jc.
Bloomingburg P.O.
Bullville
Winterton
Purdys
Circleville
Montgomery
Berea
Beaver Dam
Fairoaks
Crawford Jc.
Neely Town
Scotchtown
Stony Ford
Maybrook
Burnside
Rock Tavern (Rockiel P.O.)
Little Britain
Port Orange
W. Brookville
Otisville
Howells
Rio
Cuddebackville
Rose Point
Godeffroy
Valley Jc.
Cahoonzie
North Huguenot
Huguenot
Guymard
Sparrow Bush
Port Jervis
Tristates
Minisink
Middletown
Crystal Run
Campbell Hall
Mechanicstown
Burnside
Girarde
Bull's Switch
Denniston
Meadow Brook
Salisbury Mills
Washingtonville
Mountainville
Firthcliffe
Orrs Mills
Cornwall (Idlewild P.O.)
Cornwall on the Hudson
Cornwall
Cornwall Ldg.
Moodna
Indian Park
Kipps
Hamptonburg
New Hampton
Goshen
Farmingdale
Blooming Grove
Blooming Grove P.O.
Craigville
Houghton Farm
West Point
Highland Falls
Slate Hill
Ridgebury
South Centerville
Orange Farm
Chester
Greycourt
Craigville
East Chester
Oxford Depot
Woodbury
Woodbury Falls P.O.
Highland Mills
Central Valley
Fort Montgomery
Johnson's
Florida
West Town
Glenmere L.
Monroe
Sugar Loaf
Big Island
Unionville
Pine Island Jc.
Pine Island
Turner
Lake
Newburgh Jc.
Wilcox
Glenwood Jc.
Eden
Amity
Liberty Cors.
Pochuck
Edenville
Stone Bridge (Wisner P.O.)
Mombasha Lake
Arden
Arden P.O.
Warwick
Bellvale
New Milford
New Milford P.O.
Southfields
Greenwood Lake
Greenwood Lake
Sterling L.
Lakeville
Sterling Forest
Tuxedo L.
Tuxedo
Tuxedo Park P.O.
Sterling
Eagle Valley
ERIE
NEW YORK CENTRAL
O. & W.
N. Y. O. & W. RY.
WEST SHORE
NEW YORK CENTRAL LINES
LEHIGH & NEW ENGLAND
MIDDLETOWN & UNIONVILLE
Shawangunk
Wallkill
Neversink
Wallkill River

Map of Orange County, Showing Townships
Red, railroads; green, electric roads

ORANGE COUNTY

This county lies in the southeastern part of the state between the Hudson River and the state of New Jersey. Its area is 533,760 acres; its extent from north to south is approximately 32 miles and from east to west 35 miles. The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Middletown (city)	16,381	Monroe	2,888
Newburgh (city)	27,876	Montgomery	8,017
Port Jervis (city)	9,413	Mount Hope	1,589
Blooming Grove	2,116	Newburgh	4,807
Chester	2,135	New Windsor	2,745
Cornwall	5,110	Tuxedo	3,636
Crawford	1,693	Wallkill	2,803
Deerpark	1,753	Warwick	8,113
Goshen*	5,310	Wawayanda	1,954
Greenville	836	Woodbury	2,300
Hamptonburg	1,184		
Highlands	4,054	Total	118,118
Minisink	1,405		

---

* Goshen, in the town of Goshen, is the county seat.

Note: Middletown has at present a population of 18,000; Newburgh, 30,000; Port Jervis, 10,000.

HISTORICAL ASSOCIATIONS

Orange is one of the original counties formed in 1683. It was named in honor of William, Prince of Orange, nephew and son-in-law of James II. Rockland was afterward taken over and a portion of Ulster added. The first settlements are supposed to have been made by the Dutch, soon after the first occupation of Manhattan Island. These settlements were broken up and no record is left of them.

Among the later arrivals were Dutch, French Huguenots, and English, nearly all seeking liberty in the wilderness. Germans and Scotch also occupied portions of the county.

The first patent issued was the Minisink Patent in 1697, embracing the greater part of the county lying on the Shawangunk Mountains and a considerable portion of Sullivan. Three other patents were afterward granted, the boundaries of which were so vague that it was impossible to locate them without conflicting with others, and serious difficulties often arose between the claimants. The policy of granting large patents was abandoned, and the remaining parts of the county were granted in small tracts to actual settlers.

Settlements progressed but slowly because of fear of Indian hostilities. During the French and Indian War the frontier settlements were frequently attacked by small parties of Indians. During the Revolution the frontiers were again in a constant state of alarm, and in 1778 Brant, at the head of a large Indian force, laid waste the whole Minisink settlement.

The eastern part of the county was also the scene of stirring military events. Washington appreciated how important were the passes through the highlands, and strong fortifications were built to protect them. Heavy chains were stretched across the river and various impediments were sunk in the channel to prevent the passage of vessels. In spite of these precautions the British advanced up the river in 1777 as far north as Esopus, but on hearing of Burgoyne's surrender they returned to New York. This made clear the fact that stronger fortifications were needed. The site of West Point was chosen, and at the close of the war it was the most strongly fortified post in the country.

Through the treachery of Major Arnold, who agreed to deliver West Point into the hands of the enemy, this post was nearly lost. After the war the government works fell into decay; but the United States Military Academy since established there has made the place famous as a seat of military science. The headquarters of the American Army were for a long time located at Newburgh. It was at this place that Washington finally took leave of his army. The building occupied by Washington still stands and in it are exhibited numerous interesting relics.

During the colonial period iron mines were opened among the mountains in the southern part of the county, and the iron made from the magnetic ores of this region was used in forging the links of the chain stretched across the Hudson during the war.

On the shore of Orange Lake in the northeastern part of the county, a small mint was established for coining copper money for several of the states. The mint was abandoned on the adoption of the United States Constitution, as the care of this business was then given to the federal government.

Orange County was the birthplace of George Clinton, the first governor under the state constitution, and of his nephew, Governor DeWitt Clinton. William Henry Seward, the celebrated statesman, and Benjamin B. Odell, former governor of the state, were also born within the county.

The excellent advantages for commutation to New York City have made this section a favorite place of residence for New York business men, and for those desiring a rural home near the city.

DEVELOPMENT OF INDUSTRY

Wheat and corn were the earliest crops grown in this section, while flax was grown for the manufacture of clothing. Considerable attention was given to sheep and cattle raising. Butter and cheese were largely produced and Orange County butter came to have a wide reputation.

The improvement in transportation, brought about by the building of the Erie Railroad, and the increasing demands of New York City, led the farmers to give greater attention to the production of market milk. The first milk train was run through this county over the Erie road, in 1847. At first the dairies were generally small and much of the land was given over to the growing of general farm crops. Later, dairying took on a larger aspect, and there are now many pure-bred dairies of prominence within the county. Forage crops were generally raised, while the grain was purchased. Under the present abnormal conditions, high prices of feed have induced many farmers to apply a greater acreage to the production of grain.

The first cooperative creamery for shipping milk to New York City was established in Orange County. The cream and Neufchatel grades of cheese were originated by Mr. Lawrence, the owner of the Chester Cheese Company. The Monroe Cheese Company, at Monroe, are large manufacturers of cheese of a high quality.

Throughout the history of Orange County the most important agricultural area has been the central belt. The eastern slope of the Shawangunk Mountains is extensively cultivated, but the production does not equal that of the central belt. Neither the large area west of Basher Kill valley nor the highlands in the east are important for cultivation, although many sections are suitable for grazing. In general, the farming and stock-raising industries, as well as the dairy industry, are well distributed over the agricultural part of the county, dairying being more prominent near the railroads, and stock raising and grain farming predominating in the more distant sections.

The region in the southwestern part, formerly known as "the drowned lands" and consisting of about 17,000 acres, was originally covered with water and a dense growth of cedars. This section, much of which has been drained, forming a fine agricultural section, was for a time devoted to the growing of hemp. It is one of the largest deposits of muck under cultivation in this part of the United States. Very extensive onion crops are grown, also celery, lettuce, spinach, and carrots. Vegetables are largely produced in the towns of Newburgh, Wallkill, Chester, Greenville, and Monroe. This county now stands among the foremost in the state in market garden crops, hundreds of acres being annually devoted to the production of onions alone.

Similarly, the production of apples is widely distributed over the agricultural area of the county. The growing of small fruits, however, as well as the main part of the area in peach orchards, is confined to the eastern, mainly the northeastern, part of the county, although more or less development has taken place at other points in the Hudson River hills. The growing of apples is on the increase, in some sections to the extent of reducing the milk industry.

Poultry raising is also a prominent branch of agriculture and is very generally distributed. In some sections alfalfa is successfully grown, forming a valuable feed for dairy cattle.

Manufacturing is prominent in Newburgh and Middletown.

CLIMATE AND RAINFALL

Climatological records in Orange County have been taken at Port Jervis, at an elevation of 470 feet. The present observer is W. H. Nearpass.

The average dates for the last killing frost in spring and the first in fall are May 2 and October 2, respectively, giving a growing season of 153 days.

The period covered in the following table is 1900 to 1918, the average records beginning one year earlier:

RECORDS OF TEMPERATURE AND PRECIPITATION AT PORT JERVIS

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	25.1	67	1906	—26	1912	3.30	2.01	1905	10.3
February	25.0	60	1918*	—18	1918	3.28	2.09	1902	12.5
March	34.3	88	1905	—8	1900	3.52	2.70	1914	9.5
April	47.5	94	1915	17	1908	3.37	2.24	1901	1.2
May	59.4	97	1911	26	1903	4.00	2.25	1904	T.
June	67.2	97	1918	36	1913*	3.93	7.02	1903	......
July	71.6	103	1901	41	1912	4.85	2.89	1913	......
August	69.5	103	1918	39	1912	4.28	3.50	1911	......
September	63.1	97	1914	26	1914	3.50	3.02	1916	......
October	51.3	88	1908*	18	1911	3.54	7.36	1903	T.
November	38.9	74	1909	8	1908*	2.85	2.23	1913	2.9
December	28.5	66	1908	—20	1917	3.53	2.51	1901	10.2
Year	48.4	103	1918	—26	1912	43.95	7.36	1903	46.6

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of the county is mountainous on the southeastern and northwestern borders, with a rolling upland through the center. Several parallel ranges extend from the New Jersey line northeast to the Hudson, ending in the rocky and precipitous bluffs known as the Highlands. The Shawangunk Mountains, extending northeast from the Delaware River, occupy the northwestern corner of the county. The central portion of the county lying between the two mountain systems is a rolling upland broken by isolated hills and the deep valleys of streams. In the mountains of the southern part lies a portion of the Palisades Interstate Park.

The principal streams are as follows: Neversink River, which flows along the west side of the Shawangunk Mountains and forms a tributary of the Delaware River; the Shawangunk Kill, or Rondout Creek, which flows north along the east side of the same mountains, emptying into the Hudson; the Wallkill River, which flows north through the center of the county and unites with the Shawangunk in Ulster County; Murderers Kill, which flows east through the center into the Hudson; Wawayanda Creek, which unites with the Wallkill; and the Ramapo River, in the southern part of the county.

The soil among the mountains is light, sandy and unproductive. In the northwest it is silty loam or stony loam; in the center it is silt, sand, and gravelly loam with clay subsoil on the hills, and a fine quality of gravelly loam and alluvium in the valleys. The lowlands in the southwestern part are covered with alluvium and vegetable mold.

The attractive scenery of the mountains and the short distance from New York City accounts for the fact that Orange County has become so largely a residential section. For this reason values of land are widely variable under similar conditions of soil and topography, running from $100 to $1,000 per acre. The muck soils, which are the most valuable for farming purposes, range in value from $200 to $600 per acre.

DESCRIPTION BY TOWNSHIPS

BLOOMINGROVE: The surface is mountainous in the south and east, and rolling and moderately hilly in the north and west. Schunemunk Mountains, on the line of Woodbury, are 1,300 to 1,500 feet above tide. The hills in the north have a gradual slope and are arable to their summits, while those in the south are too steep and rocky to be susceptible of cultivation. The Otterkill is the most important stream. The alluvial lands along the streams are very fertile. The soil is generally a sandy and silty loam.

Products: Milk, hay and grain.

Average values of farm land range from $50 to $125 an acre.

CHESTER: The surface is rolling in the northwest, hilly in the center, and mountainous in the southwest. The principal elevations — Sugar Loaf Mountain (1,140 ft.), Goose Pond

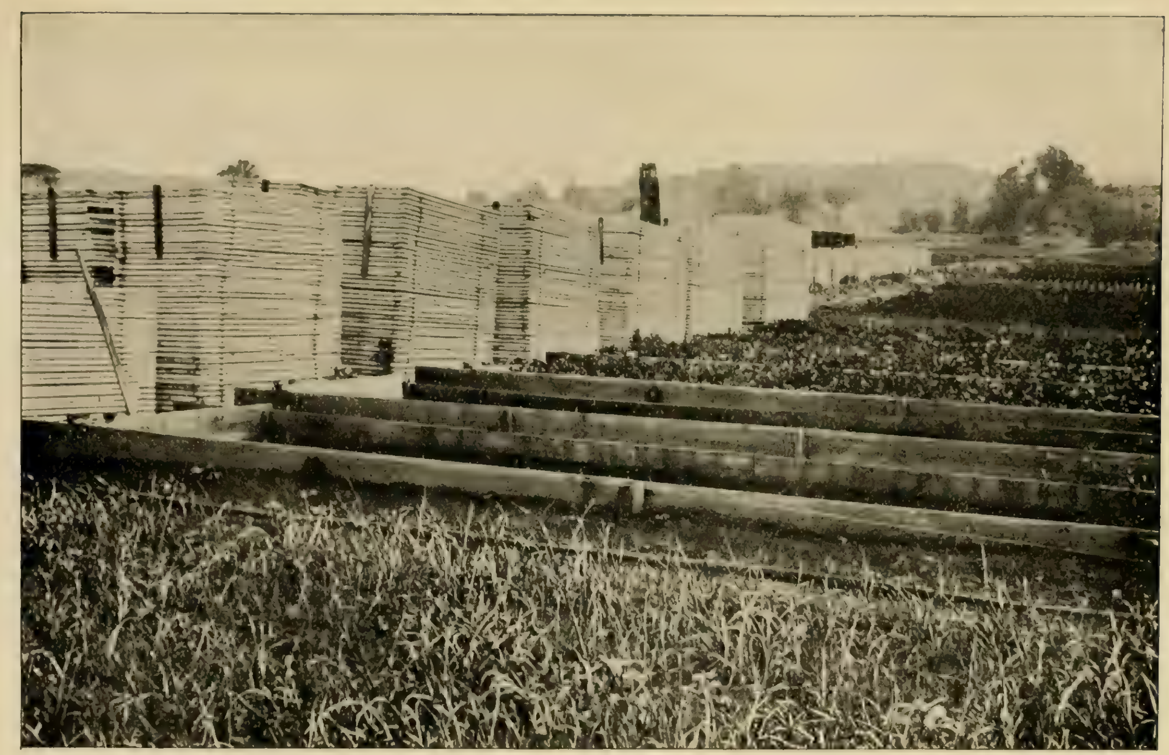


Fig. 115.— Cold Frames on Muck Land at Middletown Containing Lettuce and Celery

Mountain (1,100 ft.), and Snake Hill (980 ft.) — are all steep, rocky peaks unfit for cultivation. The highest summits are 500 to 600 feet above the valleys.

The soil is a light yellow loam underlaid by clay.

Products: Onions, celery, lettuce, spinach, cheese, hay and grain.

Average values of farm land range from $50 to $600 an acre. For residential purposes values run much higher.

CORNWALL: The surface north of the highlands is rolling and only moderately hilly. The most elevated peaks are Storm King and Crow's Nest, each over 1,300 feet in height. A number of small lakes or ponds lie among the mountains. The soil in the valleys is a sandy, silty clay and a gravelly loam.

Products: Grapes, strawberries and raspberries.

Average values of farm land range from $75 to $150 an acre.

CRAWFORD: The surface is a hilly upland broken by several high ridges. Hills along the eastern border are 400 to 500 feet above tide. The principal streams are Shawangunk Kill and its branch, the Pakanasink, both of which furnish water power. The soil is a slaty and silty loam on the hills and a sandy and gravelly loam in the valleys.

Products: Milk, potatoes, corn, wheat, oats, rye and buckwheat.

Average values of farm land range from $75 to $150 an acre.

DEERPARK: The surface is a mountainous upland broken by the valley of the Neversink River and numerous deep, rocky ravines of small streams. The Shawangunk Mountains extend along the eastern border. At the west foot of the mountains the Neversink River flows in a deep valley, through which extends the Delaware and Hudson Canal. The uplands of the central and western portions end with steep declivities along the Delaware River.

Products: Milk, hay, grain and lumber.

Average values of farm land range from $50 to $150 an acre.

GOSHEN: The surface is rolling or moderately hilly. The hills are bordered by long, gradual slopes and are arable to their summits. In the southwestern part is a considerable tract that has been reclaimed by drainage. The principal streams are the Wallkill, Quaker Creek, and the Otterkill. The soil is a sandy loam underlaid by clay, slate, and limestone.

Products: Milk, onions, hay and grain.

Average values of farm land range from $100 to $600 an acre. For residential purposes, values run much higher.

GREENVILLE: The surface is a hilly and broken upland. The Shawangunk Mountains extending along the western border are 1,300 to 1,400 feet above tide. The eastern slopes of the mountains are generally gradual and the hills are arable to their summits. The principal stream is the Shawangunk Kill, which takes its rise near the center and flows northeast. The soil is sandy, gravelly, and silty loam.

Products: Milk, hay, grain, onions and vegetables.

Average values of farm land range from $60 to $300 an acre.

HAMPTONBURGH: The surface is rolling and moderately hilly. The town is well watered, the greater part of it lying in the valleys of the streams, the principal of which are the Wallkill and Otterkill. The soil is gravelly and shaly loam or silty loam.

Products: Milk, hay, and grain.

Average values of farm land range from $75 to $200 an acre.

HIGHLAND: The surface is broken by rocky peaks and ridges of the highlands. The valleys among the mountains are deep, narrow, and rocky, and the mountains themselves are too steep and rocky for successful cultivation. The soil in the valley is a sandy and gravelly loam with occasional patches of muck. But little agriculture is carried on, and that mostly by residents of the large estates.

Average values of farm land range from $75 to $150 an acre.

MINISINK: The surface is rolling and hilly. The slopes are generally gradual, the hills being arable to their summits. The principal streams are the Wallkill River and Rutgers Creek. Muck lands occupy a portion of the eastern part. The soil is principally a gravelly loam.

Products: Milk, hay, corn, oats, potatoes, berries, apples and peaches.

Average values of farm land range from $75 to $300 an acre.

MONROE: The surface is a hilly and mountainous upland. The hills are rough and rocky the arable land lying mostly in the valleys, where the soil is a gravelly loam. In the village of Monroe is an electric plant producing light for the section within a radius of ten miles.

Products: Milk, cheese, vegetables, hay, corn, potatoes, oats, rye, wheat, apples and peaches.

Average values of farm land range from $60 to $200 an acre.

MONTGOMERY: The surface is generally a hilly upland. Hills 400 to 500 feet above tide extend along the western border. The Wallkill and its tributary Tin Brook are the principal streams. In the northern part the Wallkill furnishes excellent water power. In the southern part there is considerable alluvial land along its course. The soil is a fine quality of silty and gravelly loam.

In this township is the village of Walden, which, with its knife and pump factories, is already an important industrial center.

Products: Milk, grain, fruit and hay.

Average values of farm land range from $75 to $200 an acre.

MOUNT HOPE: The surface is generally a hilly and broken upland. The Shawangunk Mountains extend through the western part, the eastern slopes of which are susceptible of tillage almost to the summit. The highest summits in this town are 1,200 to 1,300 feet above tide. The Shawangunk River flows along the base of these mountains. The soil is generally a sandy and gravelly loam, with occasional patches of muck.

Products: Milk, hay, corn, oats, potatoes and apples.

Average values of farm land range from $65 to $150 an acre.

NEWBURGH: The surface is a hilly and broken upland, the highest summits being 600 to 700 feet above the river. A series of bluffs 100 to 200 feet in height extend along the river. The greater part of the hilly region is arable. The principal stream is Quassaic Creek. Along the inlet of Orange Lake, in the western part, is considerable marshy land. The soil is principally silty or sandy loam.

Products: Fruit and vegetables.

Average values of farm land range from $75 to $400 an acre.

NEW WINDSOR: The surface is a rolling and hilly upland. The slopes and summits of the hills are usually arable. Snake Hill is a rough, rocky elevation in the northeastern part, 500 to 600 feet above tide. The principal stream is Moodna Creek. The soil is generally silty loam.

Products: Milk, hay, fruit and grain.

Average values of farm land range from $75 to $150 an acre.

TUXEDO: The surface is hilly and mountainous. Among the hills are several small lakes and ponds, Tuxedo Lake being the largest. Tuxedo Park, a beautiful residential section, occupies a portion of the town. There is practically no agriculture except on the large estates.

Average values of farm land range from $60 to $200 an acre.

WALLKILL: The surface is undulating, at some points rising into hills of moderate elevation, and at others including valuable alluvial lands along the water courses. The principal streams are the Shawangunk Kill and the Wallkill with their numerous tributaries. The soil is silty or gravelly loam.

Products: Milk, hay, rye, corn, oats, potatoes, fruit and vegetables.

Average values of farm land range from $75 to $300 an acre.

WARWICK: The surface is mountainous in the south and east and broken and hilly in the north and west. The Bellvale Mountains and others in the east and southeast are all high, steep and rocky. In the extreme western part is a nearly level region of valuable land once known as the "drowned lands." The principal streams are the Wallkill on the western boundary, Quaker Creek on the northwest and the Wawayanda, or Warwick, and Pochuck creeks. Greenwood Lake extends about four miles into this town. Sterling and Wickham lakes lie near the eastern border. The soil is light and unproductive on the hills and a gravelly and sandy loam in the valleys. In the western part is a considerable area of muck, largely devoted to the production of onions.

Products: Milk, onions, hay, grain and fruit.

Average values of farm land range from $100 to $600 an acre. For residential purposes values run much higher.

WAWAYANDA: The surface is rolling and hilly. The greatest elevation is Joe Gee Hill in the northwestern part, 824 feet high. The "drowned lands" occupy a portion of the southeast corner. The principal streams are the Wallkill on the southeast and Rutger's Creek on the southwest. The soil is chiefly silty or sandy loam, best adapted to pasturage.

Products: Milk, hay and grain.

Average values of farm land range from $75 to $200 an acre.

WOODBURY: This town lies mostly among the highlands and its surface is rough and broken by mountains generally unfit for successful cultivation. Stockbridge Mountain reaches an elevation of 1,418 feet at its highest point. Several fine lakes lie among the hills. The soil in the valleys is a sandy and gravelly loam. There is little agriculture in this town.

Products: Milk, hay and grain.

Average values of farm land range from $60 to $200 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Erie railroad, which enters the extreme western part, sends branches to nearly all sections of the county. At Graham and in Mount Hope it divides into two lines connected by shorter lines and connecting also with a third line extending from Newburgh to New York. Two branches reach the northern part of the county, one terminating at Pine Bush, and the other, in the town of Montgomery, connecting with a line of the New York Central running to Kingston. Another branch extends southwest from Goshen to Pine Island. At Pine Island Junction connections are made by this branch with the Lehigh and New England Railroad which extends southwest to points in Pennsylvania.

The West Shore line of the New York Central extends along the eastern border of the county and connects with the Erie at Newburgh and with the New York, Ontario and Western at Cornwall. The latter road extends through the county from Cornwall, intersecting the Erie at several points and making connections with the Lehigh and Hudson River Railroad at Burnside and with the Middletown and Unionville at Middletown. The

Middletown and Unionville extends from Middletown to the southern border of Minisink where it connects with the New York, Susquehanna and Western.

From Maybrook, an important transfer point for freight going east and west, the Lehigh and Hudson River Railroad runs southwest, connecting with the Erie at Greycourt and extending into New Jersey, where it connects with points south and west.

The Central New England runs from Campbell Hall in Hamptonburg northeast into Ulster and Dutchess counties, and into Connecticut. The Sterling Mountain road is a short line extending into the southern part of the county from Ramapo, where it makes connections with the Erie.

Electric Lines

An electric line extends from Newburgh northwest to Walden and another from Middletown to Goshen. The Port Jervis traction line extends through the southern part of Deerpark.

Improved Highways

The improved highway running near the Hudson on the west passes through Newburgh, then turns slightly to the southwest and crosses the northern part of New Jersey to Jersey City and Newark, reaching New York City by ferry. Another road extends from Newburgh west to Goshen, Middletown, and Port Jervis. Numerous subdivisions and connecting branches of these roads, reaching all the most important places in the county, are shown on the accompanying map.

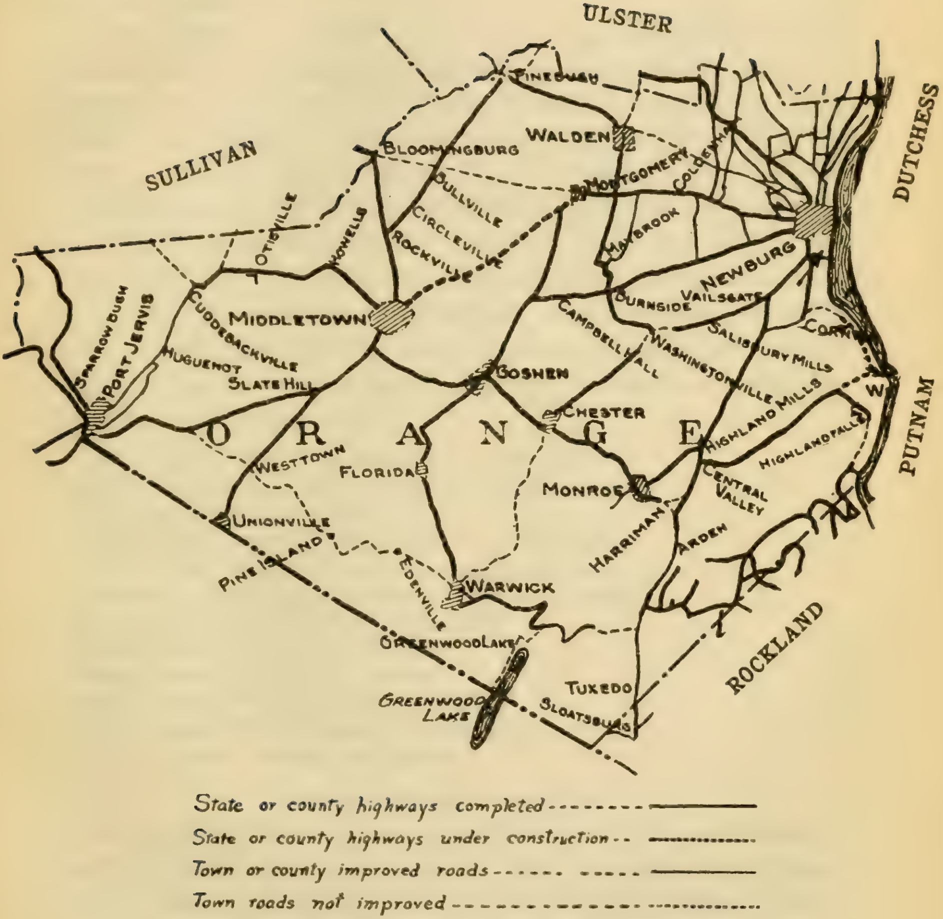
There are in the county 212 miles of completed improved highways, with 14 miles additional under construction.

Waterways

Shipping facilities on the Hudson River are of great importance to this county. Ferries cross the river from Newburgh to Beacon.

AVAILABLE MARKETS

The two important local markets are Newburgh and Middletown. Newburgh, which has excellent facilities for transportation by railroad and by the river, is an important trading center.


ULSTER
SULLIVAN
DUTCHESS
PUTNAM
ROCKLAND
O R A N G E
Pinebush
Walden
Bloomingburg
Montgomery
Coldenham
Bullville
Circleville
Rockville
Maybrook
Otisville
Howells
Newburg
Vailsgate
Burnside
Middletown
Sparrow Bush
Port Jervis
Cuddebackville
Huguenot
Slate Hill
Campbell Hall
Washingtonville
Salisbury Mills
Cornwall
Goshen
Chester
Highland Mills
Highland Falls
West Point
Westtown
Florida
Monroe
Central Valley
Unionville
Harriman
Arden
Pine Island
Edenville
Warwick
Greenwood Lake
Greenwood Lake
Tuxedo
Sloatsburg
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

It has numerous manufactures, including planing and saw mills, ship building, and the making of machinery and clothing.

Middletown manufactures oars and leather, and a rubber factory is soon to be in operation. Another well-known product is "star" hack saw blades. In this city is located the State Homeopathic Hospital.

Port Jervis and Goshen, the county seat, are smaller trade centers within the county. The former has long been known as the location of the car and repair shops of the Erie Railroad. New York City receives most of the farm produce sold outside the county. A limited amount is sent to Paterson, New Jersey.

About 223,000,000 pounds of milk is handled annually through the 59 milk establishments of the county, much of which is sold as market milk. Among the manufactured products are more than 1,000,000 pounds of American cheese, about 1,000,000 pounds of foreign type and fancy cheeses, and nearly 20,000,000 pounds of condensed and evaporated milk, besides a considerable quantity of powdered milk.

The agricultural organizations are as follows:

Chester Produce Growers' Cooperative Association, Inc.
Cornwall Poultry Association.
First Orange County National Farm Loan Association.
Florida Onion Growers' Cooperative Association, Inc.
Granges: Pomona and twenty-one subordinate granges.
Newburgh Vegetable Growers' Association.
Orange County Agricultural Society.
Orange County Dairymen's League.
Orange County Farm Bureau Association.
Orange County Sheep Growers' Association.
Warwick Valley Poultry Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Central Valley, Chester, Cornwall, Cornwall-on-Hudson, Goshen, Harriman, Highland Falls, Middletown, Monroe, Montgomery, Newburgh, Otisville, Pine Bush, Port Jervis, Florida, Tuxedo Park, Walden, Warwick, and Washingtonville.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	384,145 acres
Number of farms	3,935
Per cent of farm land improved	69.3

LIVE STOCK PRODUCTS

Milk sold	26, 881, 123 gal.
Cream sold	7, 126 gal.
Butter fat sold	360 lbs.
Butter produced	212, 111 lbs.
Cheese produced	2, 161 lbs.
Eggs produced	1, 549, 684 doz.
Wool produced	1, 405 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	10, 723
Cattle	65, 001
Sheep	3, 904
Swine	8, 838
Poultry	249, 061

BEES

Number of colonies	1, 906

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	10, 479	451, 179 bu.
Oats	4, 749	114, 215 bu.
Wheat	1, 281	24, 190 bu.
Barley	15	229 bu.
Buckwheat	940	17, 782 bu.
Rye	2, 777	48, 960 bu.
Hay and forage	109, 520	138, 241 tons
Special crops:		
Potatoes	3, 063	288, 341 bu.
Vegetables, other than potatoes	6, 164	....
Dry edible beans	26	191 bu.
Dry peas	....	3 bu.
Fruits:		
Apples	122, 633 trees	277, 355 bu.
Peaches and nectarines	212, 879 trees	124, 262 bu.
Pears	33, 098 trees	21, 994 bu.
Plums and prunes	11, 479 trees	4, 617 bu.
Cherries	7, 863 trees	3, 635 bu.
Quinces	954 trees	435 bu.
Grapes	200, 733 vines	1, 698, 745 lbs.
Small fruits	1, 192 acres	1, 727, 892 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,032	3,232
LIVE STOCK AND POULTRY		
Horses and mules	8,035	7,884
Cattle	51,440	52,805
Sheep	1,314	1,426
Swine	7,440	5,927
Poultry	250,721	247,149
BEES		
Number of colonies	1,457	2,119

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	7,865	11,647	294,229 bu.
Oats	6,281	6,528	148,715 bu.
Barley	16	138	1,732 bu.
Buckwheat	1,059	1,751	20,572 bu.
Wheat (winter)	2,075	2,088	28,685 bu.
Wheat (spring)	214	126	1,548 bu.
Rye	2,331	2,155	36,056 bu.
Hay and forage:			
Alfalfa	1,296	1,255	3,022 tons
Other hay	77,283	75,436	102,825 tons
Corn (ensilage)	4,369	5,495	44,679 tons
Corn (fodder)	....	1,773	....
Special crops:			
Field beans	14	287	1,800 bu.
Cabbage	280	350	792 tons
Potatoes	3,666	4,371	276,697 bu.
Roots raised for stock food	....	247	....
Canning factory crops	....	82	....
Other vegetables and garden crops	4,348	4,584	....

Fruits:	1917 Acres	1918 Acres	1918 Yield
Apples	5, 057	6, 518	197, 832 bu.
Peaches	2, 392	2, 542	78, 016 bu.
Pears	671	910	26, 025 bu.
Plums	88	142	30, 686 lbs.
Cherries	124	230	99, 955 lbs.
Quinces	....	13	207 bu.
Vineyard	605	758	1, 498, 385 lbs.
Small fruits	837	885	....

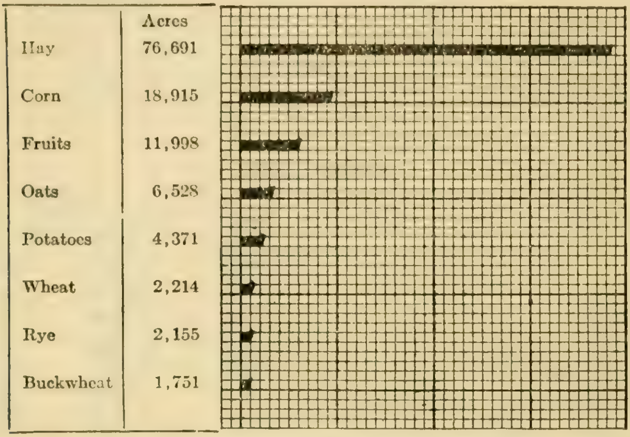
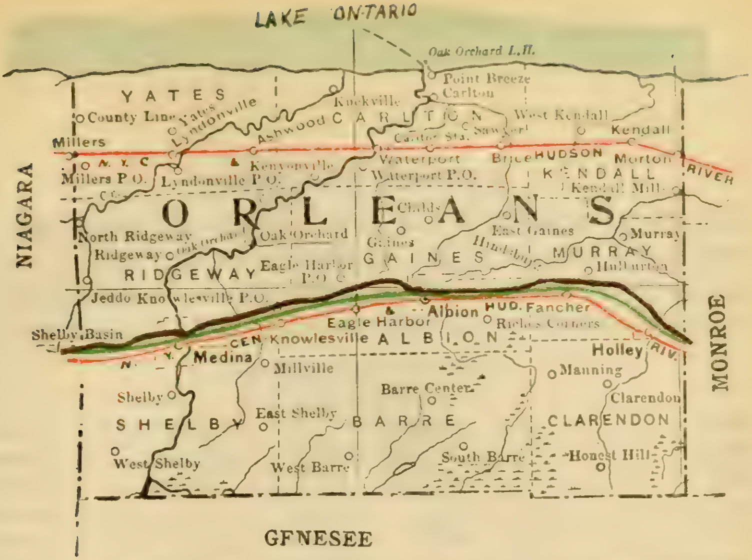
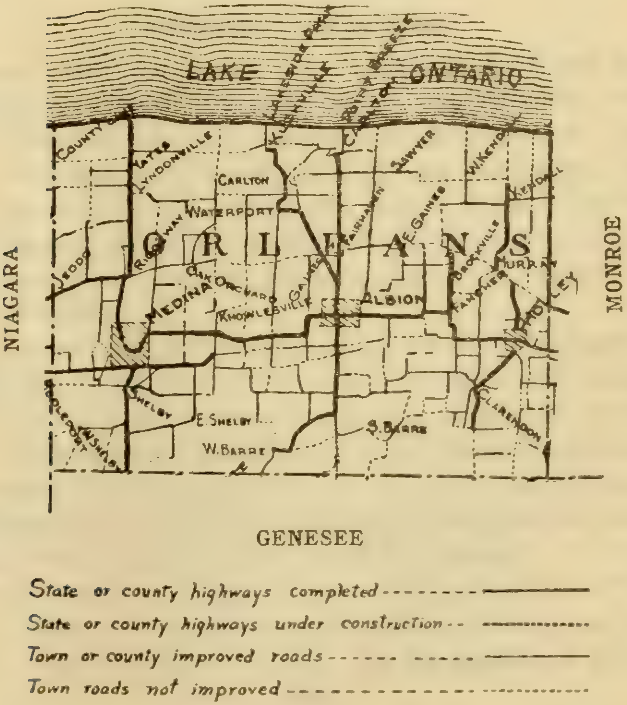


Fig. 116.— Chart Showing Relative Acreage of Crops in Orange County


LAKE ONTARIO
Oak Orchard L.H.
Point Breeze
Carlton
Kuckville
YATES
County Line
Yates
Lyndonville
Ashwood
CARLTON
West Kendall
Kendall
Sawyer
Carlton Sta.
Millers
N. Y. C.
Millers P.O.
Lyndonville P.O.
Kenyonville
Waterport
Waterport P.O.
Brice
HUDSON
Morton
RIVER
KENDALL
Kendall Mills
NIAGARA
ORLEANS
Childs
North Ridgeway
Oak Orchard
Ridgeway
East Gaines
Gaines
GAINES
Hindsburg
MURRAY
Murray
Hulberton
RIDGEWAY
Eagle Harbor P.O.
Jeddo
Knowlesville P.O.
Albion
HUD.
Fancher
Eagle Harbor
Rich's Corners
Shelby Basin
CEN.
Knowlesville
ALBION
Holley
RIV.
N. Y.
Medina
Millville
Manning
MONROE
Barre Center
Clarendon
Shelby
East Shelby
SHELBY
BARRE
CLARENDON
West Shelby
West Barre
South Barre
Honest Hill
GENESEE

Map of Orleans County, Showing Townships

Red, railroads; green, electric roads; brown, canals


LAKE ONTARIO
Kuckville Point
Carlton Breeze
County Line
Yates
Lyndonville
Carlton
Waterport
Sawyer
W. Kendall
Kendall
NIAGARA
ORLEANS
Jeddo
Ridgeway
Gaines
Fairhaven
E. Gaines
Brockville
Murray
Fancher
Holley
MONROE
Medina
Oak Orchard
Knowlesville
Albion
Shelby
Clarendon
Millers Port Shelby
E. Shelby
W. Barre
S. Barre
GENESEE
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

ORLEANS COUNTY

This county lies in the western part of the state on the south shore of Lake Ontario. It has an area of 253,440 acres; from north to south it extends approximately 17 miles, and from east to west 23 miles. The population is shown in the following table:

Population by Townships

(Census of 1915)

Albion*	7,253	Ridgeway	6,721
Barre	1,875	Shelby	4,240
Carlton	2,289	Yates	2,288
Clarendon	1,373		
Gaines	1,981	Total	33,919
Kendall	1,678		
Murray	4,221		

---

*Albion, in the town of Albion, is the county seat.

HISTORICAL ASSOCIATIONS

Orleans County was erected from Genesee in 1826, and named from the French Royal House of Orleans. The territory of what is now Orleans County was a part of the domain of the Seneca Indians, although it is not probable that any permanent Indian village was ever located within the county limits. The three eastern towns of the county belonged to the Connecticut tract and the Pulteney estate, and the remaining part of the county to the Holland Purchase.

The first settlers were chiefly natives of New England, who possessed the traditional Puritan energy, thrift, and economy. Hardship and privation were everywhere present in the early years. Sickness was prevalent and was aggravated by the scarcity of foodstuffs. Under such conditions the number of discouraged and helpless would have been much greater had not the Holland Company been extremely lenient with its debtors.

Settlement was very slow previous to the opening of the "ridge road" in 1809. From then until the War of 1812, land along the ridge road was rapidly settled. On the capture of Fort Niagara by the British, many fled from their homes for a time. After the return of peace the tide of immigration again set in toward this region, most of the settlers choosing locations in the immediate vicinity of the ridge road until the completion of the Erie Canal. Since that time progress throughout the county has been uninterrupted.

DEVELOPMENT OF INDUSTRY

A portion of the county lying north of the ridge road was known in early times as the "North Woods," from the fact that it was heavily timbered with white wood, oak, hemlock, elm, beech, pine, basswood, and maple. Much of the oak was squared and sent to Europe for shipbuilding. Large quantities of other lumber were shipped to distant parts of the country, but by far the larger portion of this timber was burned where it fell and the ashes were made into potash or black salts, which formed the chief article of money value to the pioneer.

The fruit interest has been developed within the past twenty-five years, until it has become the leading industry in the county. occupying about one-fourth of the cultivated land. Most attention is given to fruit growing in the northern half of the county, due to the fact that spring freezes are less likely to injure fruit buds than in the southern part. While all fruit plantings have been extended, a greater increase has been made in peach planting than in any other. In addition to the favorable climatic and soil conditions, the development of better transportation and mechanical cold storage has had a considerable influence in increasing the acreage of fruit.

According to the agricultural census of 1918 Orleans County ranks second in New York State in the production of peaches, plums, and quinces, and third in apples and pears. Excluding fruit, the cash crops are winter wheat, beans, cabbage, potatoes, tomatoes, and peas for canning, and muck crops — lettuce, onions, and celery. The county also ranks third in the production of canning crops, including peas, tomatoes, and beans, these crops having been largely substituted for field beans. Barley and other cereals are generally raised.

Orleans County has more sheep in proportion to its area than any other county in the state, and ranks third in the number of sheep kept.

CLIMATE AND RAINFALL

The meterological records here given for Orleans County were made at Millville under direction of the Regents of the University of the state of New York.

The following tables, compiled from observations covering the period from 1840 to 1848, show both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT MILLVILLE

	TEMPERATURE					PRECIPITATION
	Average	Highest maximum		Lowest minimum		Average inches
		Degree	Years	Degree	Years	
January	26.0	58	1843	—6	1840	2.46
February	26.4	64	1845*	—5	1846	1.88
March	32.3	80	1845	—12	1841	1.68
April	45.6	86	1844	12	1844	2.11
May	54.7	91	1846	25	1841	2.13
June	63.2	91	1843	32	1844*	2.65
July	68.2	95	1845*	40	1840	2.34
August	67.7	96	1845	42	1841	2.09
September	59.5	91	1846	28	1840	3.75
October	46.6	79	1846	18	1844	3.14
November	37.8	78	1841	5	1847	2.75
December	30.0	55	1847	3	1845*	1.95
Year	46.1	96	1845	—12	1841	28.93

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is level or undulating, and, except in the extreme southern part, has a gradual slope toward the lake. It is divided into three distinct plateaus by ridges extending east and west through the county nearly parallel to the lake shore.

The lower plateau slopes upward from the lake shore to the lake ridge, a distance of six to eight miles, where it attains an elevation of about 400 feet. This ridge, which is composed of sand and gravel, is elevated twenty to thirty feet above the lower plateau, to which it descends with a uniformly gentle slope. There is a similar slope on the south side of the ridge, although in many places the general level is nearly as high as that of the ridge. From the earliest settlement of the county the ridge road has had its course over the summit of this ridge.

The second plateau is gently undulating and four to six miles wide. This ridge, entering from Niagara County, runs nearly east through the townships of Shelby and Barre, and south and east through Clarendon. In the towns of Shelby and Clarendon the ridge has steep slopes, but in Barre its ascent is gradual.

The upper plateau is undulating, rising gently for about two miles to the culminating ridge. For about two miles further the surface is quite level, then gradually descends to the Tonawanda swamp on the south border of the county.

The principal streams are Oak Orchard, Johnson, and Sandy creeks, which rise in or near the Tonawanda swamp and flow north and east through deep channels to the lake.

The soil north of the ridge road is generally sandy or gravelly loam, except near the lake, where a heavier clay loam soil predominates. In the southern part of the county a large proportion of the area has a limestone soil. Extensive Medina sandstone quarries are located at Holley, Fancher, and Albion.

DESCRIPTION BY TOWNSHIPS

NOTE: Land values in Orleans County do not include buildings.

ALBION: The surface is undulating, and the soil is a rich loam. Within this town are four canning factories, including the Burt Olney Canning Company. There is also a new ketchup factory, which is one of the most modern and largest of its kind. Three large cold storage plants are capable of holding nearly 200,000 barrels of fruit. A large number of western lambs are fed in this township each winter.

Products: Apples, pears, peaches, winter wheat, canning crops, corn, field beans, hay, dairy products, sheep and swine.

Average values of farm land range from $75 to $175 an acre.

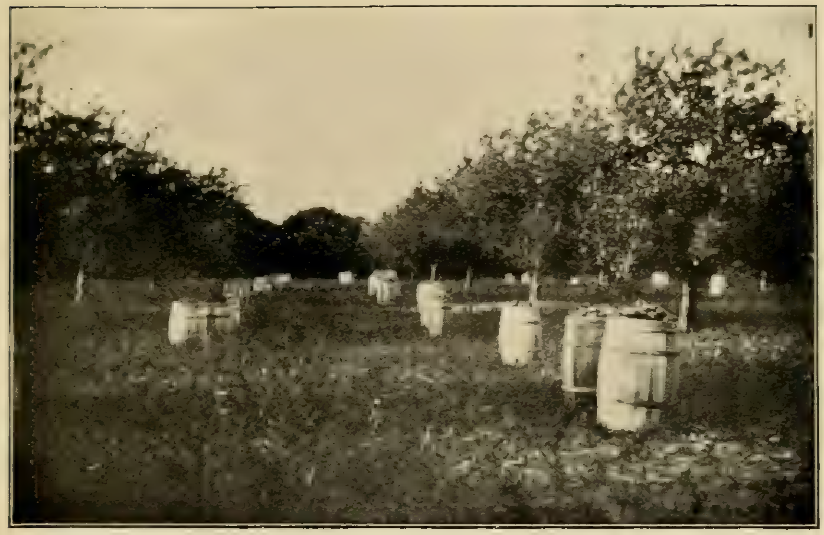


Fig. 117.— Young Baldwin Orchard at Kendall. Owned by H. E. Wellman

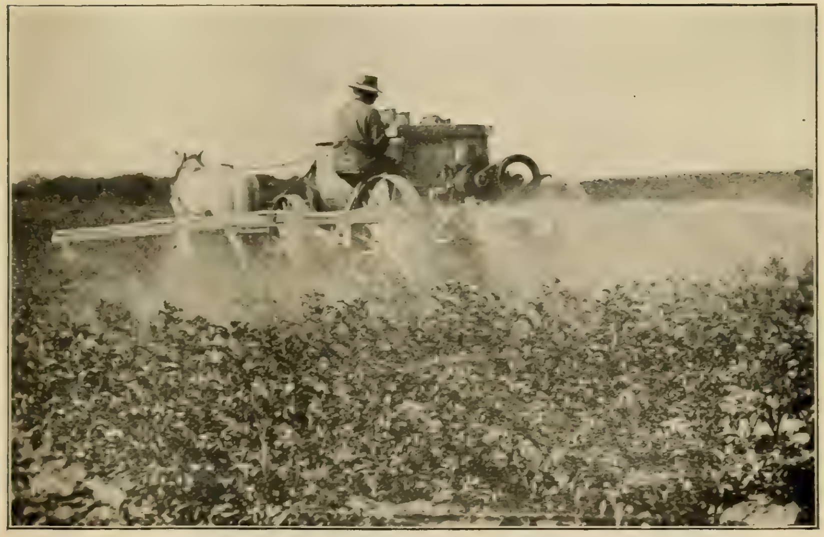


Fig. 118.— Spraying a 40-Acre Potato Field in Orleans County The Average Yield of This Farm Has Never Fallen Below 200 Bushels Per Acre

BARRE: The surface is undulating, the southern part being occupied by the Tonawanda swamp, which is largely covered with timber. The soil is a rich loam underlaid by the Niagara limestone.

Products: Winter wheat, hay, field beans, oats, corn, potatoes, canning factory crops, apples, pears, dairy products, sheep and swine.

Average values of farm land range from $75 to $125 an acre.

CARLTON: The surface is level and the soil is generally sandy. Oak Orchard Creek flows north across the town. Johnson Creek forms the northwestern boundary. An excellent modern cold storage plant is located at Waterport. This township leads in the production of cabbage.

Products: Apples, peaches, pears, quinces, cherries, winter wheat, field beans, oats, corn, cabbage, barley, hay, potatoes and canning crops.

Average values of farm land range from $75 to $140 an acre.

CLARENDON: Along the line of the mountain ridge the surface is broken; elsewhere it is gently rolling or level. In the southwest Tonawanda swamp occupies two or three thousand acres. The east branch of Sandy Creek rises in the Tonawanda swamp and flows north. The soil is generally a sandy loam intermixed with limestone in the north. A limestone crusher is operated in the village of Clarendon.

Products: Winter wheat, field beans, oats, corn, potatoes, canning crops, hay, apples, pears, dairy products and sheep.

Average values of farm land range from $60 to $110 an acre.

GAINES: The surface is generally level, the lake ridge extending east and west through the center. The west branch of Sandy Creek and tributaries of Oak Orchard Creek are the principal streams. The soil is sandy. Several thousand western lambs are fatted in this township annually.

Products: Apples, pears, peaches, winter wheat, oats, canning crops, field beans, hay, corn, potatoes, cabbage, dairy products, sheep and swine.

Average values of farm land range from $75 to $130 an acre.

KENDALL: The surface is level. Bald Eagle Creek crosses the center of the town and Sandy Creek the southern part. With the exception of the belt of clay across the southern part, the soil is generally a sandy loam. There are two large modern cold storage plants in the town. Kendall is one of the three leading peach townships of the county.

Products: Apples, peaches, pears, quinces, prunes, winter wheat, field beans, oats, corn, hay, cabbage, dairy products and sheep.

Average values of farm land range from $75 to $150 an acre, with the exception of a narrow belt about a mile wide running east and west through the township parallel to the ridge road, which is worth from $15 to $25 an acre.

MURRAY: The surface is generally level, except in the southwestern part, where it is rolling. Sandy Creek is the principal stream. The soil is generally a clayey loam with some sandy and gravelly loam. At Holley are located extensive sandstone quarries. Holley is also the location of one of the largest cider mills in the world.

Products: Winter wheat, field beans, hay, oats, corn, canning crops, potatoes, cabbage, apples, pears, peaches and grapes.

Average values of farm land range from $75 to $125 an acre.

RIDGEWAY: The surface is generally level. Oak Orchard Creek is the principal stream. The soil is a sandy loam. Medina is one of the largest apple-shipping points in western New York. It has two large canning factories and three large cold storage plants.

Products: Apples, peaches, pears, plums, quinces, corn, hay, field beans, canning crops and potatoes.

Average values of farm land range from $60 to $175 an acre.

SHELBY: The surface is undulating and the southern part is occupied by the Tonawanda swamp. Oak Orchard Creek crosses the center of the town. The soil is a mixture of sand, clay, and lime.

Products: Winter wheat, oats, field beans, corn, barley, potatoes, hay, canning crops, apples, pears, dairy products, sheep and swine.

Average values of farm land range from $60 to $120 an acre.

YATES: The surface is level except along Johnson Creek, where it is undulating. The soil is a sandy and gravelly loam, except along the lake, where it is a clayey loam.

Products: Apples, peaches, pears, cherries, winter wheat, hay, oats, field beans, corn, barley, potatoes, cabbage, canning crops and dairy products.

Average values of farm land range from $60 to $150 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

A line of the New York Central crosses the northern tier of towns. Another line of the New York Central extending to Rochester on the east and to Buffalo on the west crosses the center of the county, passing through Holley, Albion, and Medina.

An electric road follows about the same course, as does also the Barge Canal.

Improved Highways

The "Million Dollar" highway, leading from Rochester to Lockport, crosses the central part of Orleans County, passing through Holley, Albion, and Medina.

The county is crossed from north to south by improved highways extending through Albion in the center, Medina in the western part, and Holley in the eastern part. There are also several shorter sections, as shown on the accompanying map.

There are 93 miles of completed improved highways in the county.

AVAILABLE MARKETS

Albion, Medina, Holley, Kendall, Waterport, and Lyndonville are the principal markets within the county.

At Albion is located three large cold storage plants, an extensive ketchup factory, and four canning factories, including the

Burt Olney Company, one of the largest in Orleans County. Albion is also the location of the Western House of Refuge for Women.

Medina is one of the largest apple-shipping points in western New York. It has also two large canning factories and three large cold storage plants.

At Holley is located one of the largest cider mills in the world. It frequently happens that there are as many as 125 carloads of apples on track at one time.

The towns of Kendall, Carlton, and Yates have the advantages of excellent modern cold storages within their limits.

The milk produced in the county is mostly sold as market milk in Rochester, Buffalo, Niagara Falls, and neighboring cities.

There are thirteen canning factories in Orleans County.

The agricultural organizations are as follows:

Granges: Pomona and 11 subordinate granges.
Orleans County Agricultural Society.
Orleans County Canning Crops Association.
Orleans County Dairymen's League.
Orleans County Farm Bureau Association.
Orleans County Sheep Breeders' Association.
Rochester National Farm Loan Association.
Transit Grange Cooperative Association, Inc.

EDUCATIONAL FACILITIES

An approved course in agriculture is given at Albion.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Albion, Holley, Kendall, Knowlesville, Lyndonville, Medina, and Waterport.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	232,892
Number of farms	2,780
Per cent of farm land improved	86.9

LIVE STOCK PRODUCTS

Milk sold	403,629 gal.
Cream sold	968 gal.
Butter fat sold	395,020 lbs.
Butter produced	392,708 lbs.
Cheese produced	2,667 lbs.
Eggs produced	850,702 doz.
Wool produced	38,159 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	10,924
Cattle	12,953
Sheep	59,866
Swine	10,960
Poultry	134,740

BEES

Number of colonies	1,703

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	8,434	375,583 bu.
Oats	17,245	584,442 bu.
Wheat	20,868	527,634 bu.
Barley	2,150	56,496 bu.
Buckwheat	632	12,762 bu.
Rye	673	13,153 bu.
Hay and forage	44,313	57,749 tons
Special crops:		
Potatoes	4,111	571,609 bu.
Vegetables, other than potatoes	4,418	....
Dry edible beans	19,435	291,191 bu.
Dry peas	1,287	21,658 bu.
Fruits:		
Apples	549,749 trees	2,229,462 bu.
Peaches and nectarines	157,934 trees	140,398 bu.
Pears	196,513 trees	105,233 bu.
Plums and prunes	26,313 trees	25,971 bu.
Cherries	14,682 trees	8,979 bu.
Quinces	25,233 trees	23,125 bu.
Grapes	38,321 vines	565,904 lbs.
Small fruits	236 acres	300,311 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,529	2,497

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	9,918	6,838
Cattle	12,045	12,675
Sheep	36,603	34,338
Swine	10,572	9,781
Poultry	126,221	129,782

BEES

Colonies	1,414	1,818

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	5,809	5,195	76,577 bu.
Oats	11,515	14,402	465,081 bu.
Barley	2,455	4,244	115,798 bu.
Buckwheat	1,040	1,295	17,039 bu.
Wheat (winter)	23,402	23,735	467,300 bu.
Wheat (spring)	158	62	1,394 bu.
Rye	1,021	930	15,074 bu.
Hay and Forage:			
Alfalfa	1,770	1,483	3,238 tons
Other hay	36,492	26,037	46,947 tons
Corn (ensilage)	2,525	2,632	8,013 tons
Corn (fodder)	....	1,420	....
Special Crops:			
Field beans	14,393	9,640	38,561 bu.
Cabbage	1,418	1,880	5,820 tons
Potatoes	3,718	3,429	219,662 bu.
Roots raised for stock food	....	465	....
Canning factory crops	3,258	4,073	....
Other vegetables and garden crops	944	994	....
Fruits:			
Apples	19,626	23,062	646,304 bu.
Peaches	6,546	5,045	649,289 bu.
Pears	4,203	4,657	194,133 bu.
Plums	293	344	713,831 lbs.
Cherries	417	404	480,089 lbs.
Quinces	....	793	17,353 bu.
Vineyard	169	123	232,205 lbs.
Small fruits	721	372	....

	Acres
Fruits	34,810
Hay	27,520
Wheat	23,797
Oats	14,402
Beans	9,640
Corn	9,247
Barley	4,244
Canning Crops	4,073
Potatoes	3,429
Cabbage	1,880
Buckwheat	1,295
Rye	930

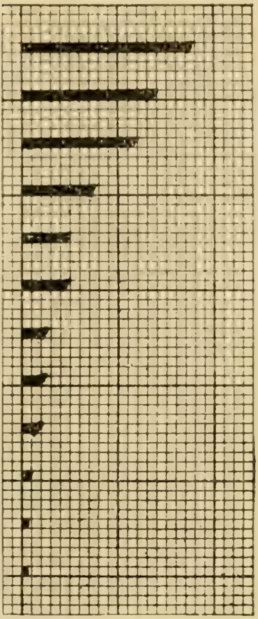


FIG. 119.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN ORLEANS COUNTY

OSWEGO COUNTY

Oswego County occupies a central position in the state from east to west, Lake Ontario lying on its northwest border. The area is 618,240 acres. From north to south it extends approximately 30 miles, and from east to west 35 miles. The population is shown in the following table:

POPULATION BY CITIES AND TOWNS

(Census of 1915)

Fulton (city)	11, 138	Palermo	1, 281
Oswego (city)*	25, 426	Parish	1, 392
Albion	1, 510	Redfield	678
Amboy	670	Richland	3, 920
Boylston	578	Sandy Creek	2, 326
Constantia	2, 123	Schroeppel	3, 149
Granby	1, 928	Scriba	2, 260
Hannibal	2, 334	Volney	2, 420
Hastings	2, 361	West Monroe	935
Mexico	3, 149	Williamstown	861
New Haven	1, 476		
Orwell	924	Total	75, 929
Oswego†	3, 090		

---

*Oswego is the county seat.

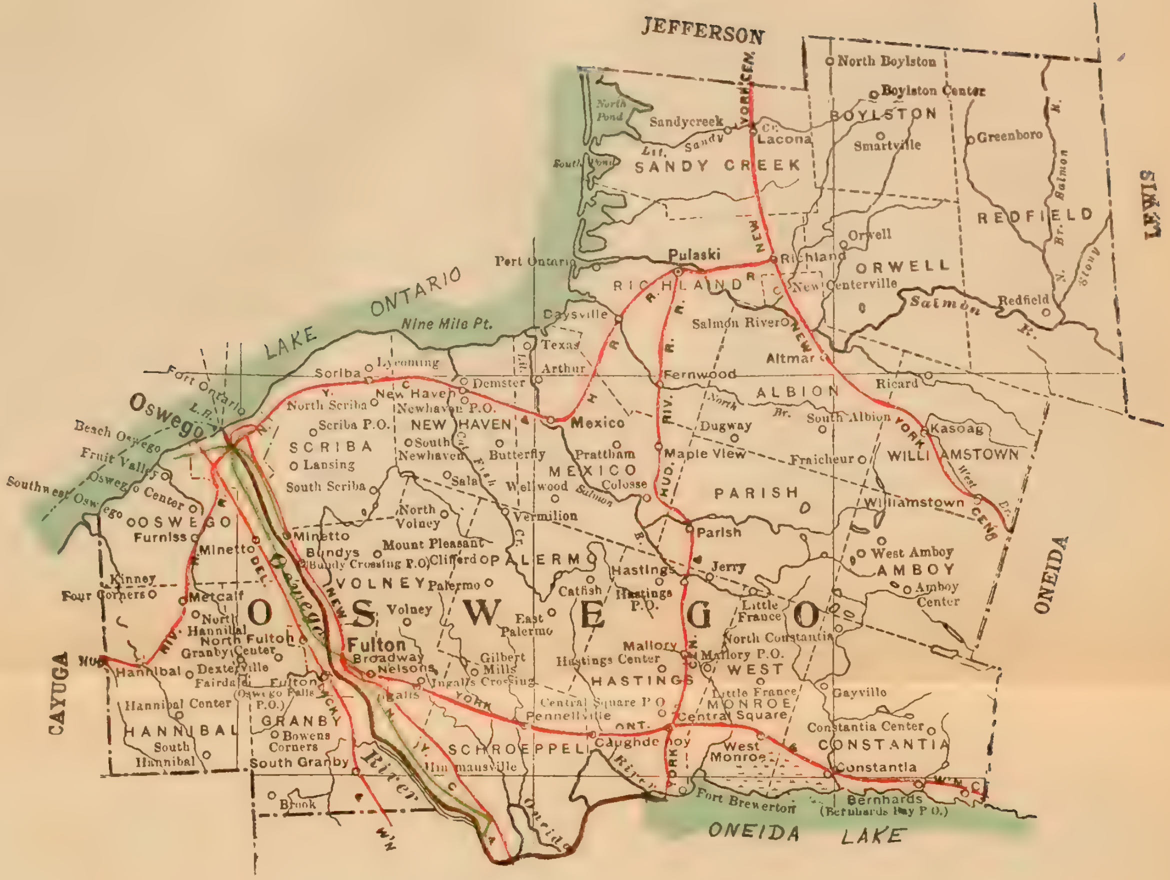
†The town of Minetto was erected December 30, 1915, and comprises 3d election district of town of Oswego.

NOTE: Fulton now has a population of 13,000.

HISTORICAL ASSOCIATIONS

The county was erected from Onondaga and Oneida in 1816. The name is of Indian origin, meaning " flowing out." In 1615 Samuel Champlain marched through this section with a company of Europeans and hundreds of Indians on his way to subjugate the Iroquois and secure their domain for the French power. Finding that he had underrated the task, he was forced to retreat.

The territory now included in Oswego County was the favorite hunting and fishing grounds of the Oneidas and Onondagas, whose villages, however, were outside the county limits. That portion of Oswego County lying near the mouth of the river was discovered in 1654 by French Jesuits. In 1700 the English explored


JEFFERSON
LEWIS
ONEIDA
ONONDAGA
CAYUGA
LAKE ONTARIO
ONEIDA LAKE
OSWEGO
BOYLSTON
SANDY CREEK
REDFIELD
ORWELL
RICHLAND
ALBION
WILLIAMSTOWN
AMBOY
PARISH
MEXICO
NEW HAVEN
SCRIBA
OSWEGO
VOLNEY
PALERMO
HASTINGS
WEST MONROE
CONSTANTIA
SCHROEPPEL
GRANBY
HANNIBAL
North Boylston
Boylston Center
Smartville
Greenboro
Sandycreek
Lacona
North Pond
South Pond
Redfield
Orwell
New Centerville
Richland
Pulaski
Port Ontario
Salmon River
Altmar
Ricard
Kasoag
South Albion
Fernwood
Daysville
Texas
Arthur
Demster
Nine Mile Pt.
Lyconung
Scriba
North Scriba
New Haven
Newhaven P.O.
Scriba P.O.
Lansing
South Scriba
South Newhaven
Butterfly
Mexico
Prattham
Colosse
Wellwood
Dugway
Maple View
Fraicheur
Williamstown
West Amboy
Amboy Center
Parish
Jerry
Vermilion
Sala
North Volney
Minetto
Bundys
Bundy Crossing P.O.
Mount Pleasant
Clifford
Palermo
Volney
Fulton
Broadway
Nelsons
Gilbert Mills
Ingalls Crossing
Hastings
Catfish
Hastings P.O.
East Palermo
Little France
North Constantia
Mallory
Mallory P.O.
Hastings Center
Central Square P.O.
Pennellville
Central Square
Little France
Gayville
Constantia Center
Constantia
West Monroe
Caughdenoy
Fort Brewerton
Bernhards
(Bernhards Bay P.O.)
Hinmansville
Oswego
Fort Ontario
Beach Oswego
Fruit Valley
Oswego Center
Southwest Oswego
Furniss
Minetto
Kinney
Four Corners
Metcalf
North Hannibal
North Fulton
Granby Center
Dexterville
Fairdale
Fulton
(Oswego Falls P.O.)
Hannibal
Hannibal Center
South Hannibal
Bowens Corners
South Granby
Brook
Oswego River
Oneida River
Salmon R.
Sandy Cr.
NEW YORK CEN.
R. W. & O.
D. L. & W.
N. Y. O. & W.
N. Y. C.
W. N. C.

Map of Oswego County, Showing Townships

Red, railroads; green, electric roads; brown, canals

the country occupied by the Five Nations as far west as Oswego. About twenty years later a trading house was built at this point under the direction of the New York colonial government and a considerable trade was carried on by the English between Oswego and Albany through the Oswego River, Oneida River and Lake, Wood Creek, and the Mohawk.

When the English built a fort on the west bank of the river in 1727, the French, who also claimed this territory, remonstrated against the action of the English. In 1756 it was captured by the French under Montcalm, and the fortifications were demolished. Two years later it was rebuilt by Colonel Bradstreet. In 1760 Lord Amherst embarked here with a powerful army, and from this time Oswego became the most important post on the frontier. It continued in possession of the British until 1796, when it was surrendered under the provisions of Jay's treaty.

In 1790 George Scriba, a merchant of New York City, purchased 500,000 acres of land lying between lakes Oneida and Ontario for the sum of $80,000. Under his management a few settlements were made at various points previous to 1800, but immigration did not take place rapidly for a number of years. In common with other frontier settlements, the growth of this region was seriously retarded by the War of 1812.

During May, 1814, Oswego was taken by the British. After the return of peace the history of this section became one of continued progress. The opening of the Erie and Oswego canals in this state and of the Welland Canal in Canada greatly increased the commercial importance of Oswego and stimulated manufacturing interests throughout the county. Steam navigation was opened in Lake Ontario in 1816, and this, together with general improvements of navigation, caused Oswego to make a remarkable growth.

DEVELOPMENT OF INDUSTRY

As soon as the land was cleared stock raising was given considerable attention. At about 1860 dairying became of paramount importance and still continues to be the leading industry. Fruit raising is one of the chief industries, including berries, currants, pears, peaches, apples, and grapes. Oswego County is especially noted for its production of strawberries. A large amount of honey is produced, particularly in the eastern and western portions.

Manufacturing is important, both in Oswego and Fulton.

CLIMATE AND RAINFALL

The climatological records here given for Oswego County were taken at Oswego. During the early part of the observations, from 1870 to 1884, the elevation was 299 feet above sea level. The later observations were taken at an elevation of 335 feet.

Average dates for the last killing frost in spring and the first in fall are April 27 and October 19, respectively, giving a growing season of 179 days. The length of growing season decreases gradually to about 140 days in the eastern part.

The following table, compiled from records covering a period of from 42 to 45 years. with the exception of the snowfall data, which is for 31 years, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT OSWEGO

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	23.8	69	1906	—23	1885	3.15	2.38	1874	21.5
February	23.1	61	1880	—18	1908	2.68	1.65	1880	18.9
March	30.8	78	1910	—11	1872	2.82	2.68	1873	10.9
April	42.7	85	1913*	13	1874	2.26	2.19	1886	2.2
May	54.2	94	1879	27	1902	2.92	2.36	1912	T.
June	63.5	98	1875	39	1885	3.25	2.80	1889	......
July	69.3	100	1878	45	1885	3.32	3.71	1911	......
August	67.7	98	1883	44	1909	2.70	3.76	1893	......
September	61.8	93	1881	35	1913*	3.73	2.92	1893	T.
October	50.6	84	1891	24	1889	3.30	3.01	1873	0.8
November	38.9	75	1909	—1	1875	3.26	1.84	1879	8.5
December	28.6	66	1901	—18	1884	3.57	2.81	1878	19.9
Year	46.2	100	1878	—23	1885	35.96	3.76	1893	82.7

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is generally level or gently undulating. A series of bluffs twenty to forty feet high border immediately upon the lake; from their summits the land stretches out in long and gradual slopes occasionally broken by the valleys of the river courses. The general inclination is northerly. A low ridge extending in an easterly and westerly direction from three to five miles north of Oneida Lake forms the watershed between lakes Ontario and Oneida.

The drainage of the western and southern parts of the county is principally through the Oswego River and of the northern and eastern portions through Salmon River and a great number of smaller streams flowing directly into the lake. The Oswego River, which is formed by the junction of Seneca and Oneida rivers, is 23 miles in length and falls 128 feet in its course, furnishing excellent waterpower at several points. Salmon River and other streams flowing into the eastern extremity of the lake have successions of rapids and cascades.

Lake Ontario, which constitutes the northwestern boundary, presents an almost unbroken coast line for a distance of forty miles along the border of this county. The mouth of the Oswego River furnishes a valuable harbor, the only one of great importance in the county. Oneida Lake on the southern boundary is 600 feet above tide. It forms one link in the chain of the internal water communication of the state. A portion of the land in its immediate vicinity is marshy.

The drift and alluvial deposits covering the greater part of the county furnish a great variety of soils. The sandy portions are light and weak, while the clay portions are hard and unyielding in some places. When these are mixed, a rich, deep soil is the result. Along the eastern border of the county are quantities of limestone boulders which essentially modify the soil of that region. The marshes are generally composed of beds of black muck and other vegetable matter, and when drained and cultivated form a rich natural meadow.

DESCRIPTION BY TOWNSHIPS

Albion: The surface is level or gently undulating. The summits of the ridges are 500 to 600 feet above sea level. The lowlands are wet, and in some places marshy. Salmon River flows through the northern part. The soil consists of deposits of sand

and gravel and is of medium quality. Drift deposits cover the surface except along the river courses.

Products: Dairy, lumber and wood.

The average value of farm land is $35 an acre.

AMBOY: The surface is rolling, with a general southerly inclination. The highest point is about 755 feet above sea level. It is drained principally by Little River and other small tributaries of Oneida Lake. In the southern and western parts are numerous small lakes and ponds. The soil is principally a sandy or gravelly loam.

Products: Dairy, lumber and wood.

The average value of farm land is $35 an acre.

BOYLSTON: The surface is rolling in the center and east, and moderately hilly in the west. It has a westerly inclination, the highest points in the east rising from 1,200 to 1,300 feet above tide. The soil in the northern and western parts is a productive gravelly loam. The southeast corner extends into the gray limestone region, and the soil is light and thin.

Products: Dairy products, lumber and wood.

The average value of farm land is $35 an acre.

CONSTANTIA: The surface is nearly level, with a slight inclination toward Oneida Lake on the south. The principal streams are tributaries of Oneida Lake. The soil is generally fertile and consists of clay, gravel, sand, and vegetable mold.

Products: Dairy products, wood and small fruit.

The average value of farm land is $35 an acre.

GRANBY: The surface is gently rolling, with a slight inclination to the northeast. Oswego River flows along the eastern border. The principal streams are Ox Creek and the outlet of Neatahwanta Lake, which lies in the eastern half of the town. The soil is generally a sandy or gravelly loam.

Products: Dairy products, potatoes, muck land products and canning factory crops.

The average value of farm land is $100 an acre.

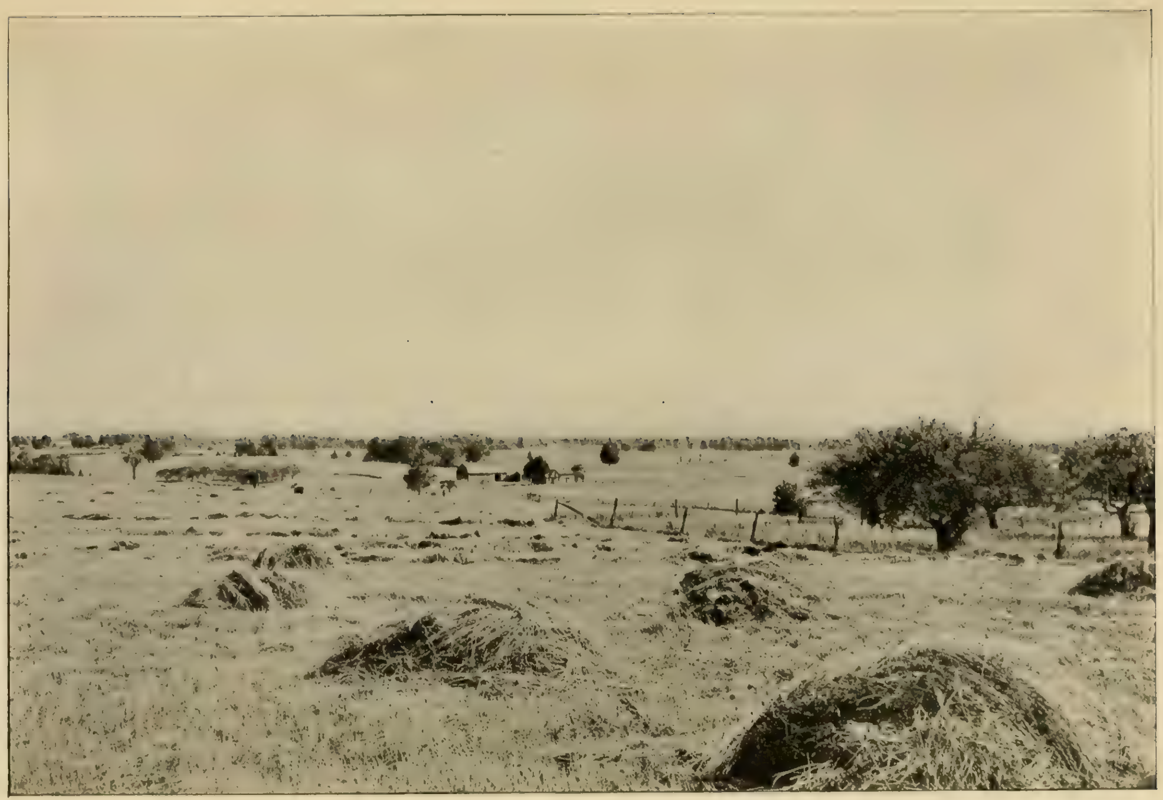


FIG. 120.— ONTARIO PLAIN NEAR MEXICO, LAKE ONTARIO IN THE DISTANCE

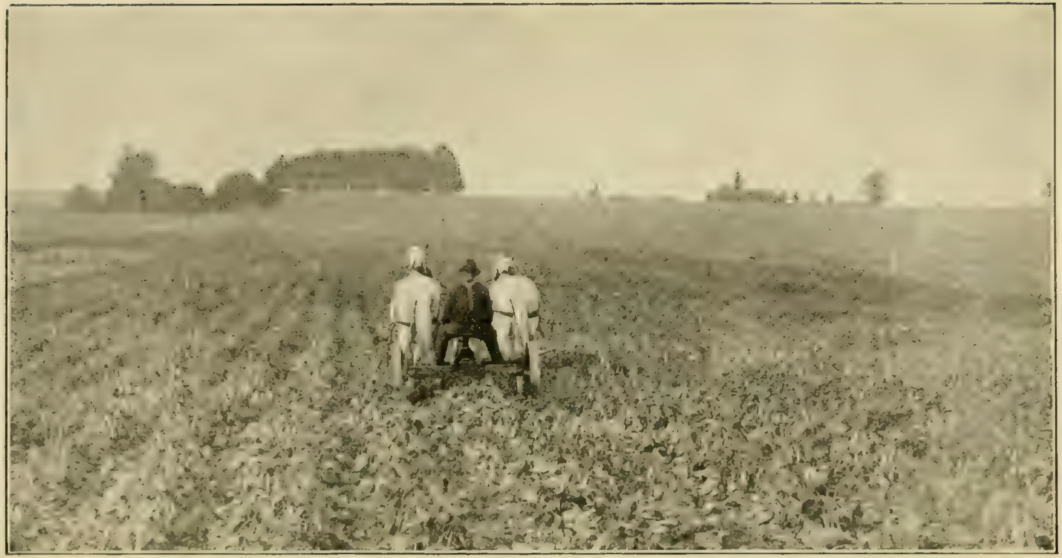


FIG. 121.—CULTIVATING BEAN CROP IN FULTON, OSWEGO COUNTY

HANNIBAL: The surface is gently undulating, the average elevation being about 400 feet. In the eastern part are several swamps. The soil is a rich sandy and gravelly loam.

Products: Dairy products, fruit and potatoes.

The average value of farm land is $75 an acre.

HASTINGS: The surface is level or gently undulating, its northern part being about 500 feet above sea level. Oneida River forms part of the southern boundary. The soil is clayey, sandy, and gravelly loam. In some parts of the town it is difficult to find fresh water by digging. Brine springs are found in several localities.

Products: Dairy products and small fruits.

The average value of farm land is $65 an acre.

MEXICO: The surface is gently rolling. It is well watered by numerous small streams. All parts of the town are arable. The soil consists of clayey, sandy, and gravelly loam, and is very productive.

Products: Dairy products, hay and canning factory crops.

The average value of farm land is $75 an acre.

MINETTO: The surface is generally rolling, and the soil is a gravelly loam, stony in some portions.

Products: Dairy products and fruit.

The average value of farm land is $35 an acre.

NEW HAVEN: The surface is rolling and generally smooth. It is watered by small stream flowing into Lake Ontario. The soil is principally a sandy and gravelly loam.

Products: Dairy products and fruit.

The average value of farm land is $75 an acre.

ORWELL: The surface has a southwesterly inclination. The eastern border is elevated from 300 to 500 feet above the western border and 900 to 1,200 feet above tide. It is moderately hilly and in some places is considerably broken by deep ravines of the streams. On Salmon River is a fall worthy of note, the precipice being 110 feet high. The banks of the stream below the falls are 200 feet high. The soil is generally a gravelly loam.

Products: Dairy products and wood.

The average value of farm land is $40 an acre.

OSWEGO: The surface is generally rolling, ending in a bluff shore on the lake. The soil is a gravelly loam, stony in places.

Products: Dairy products, fruit and canning factory crops.
The average value of farm land is $75 an acre.

PARISH: The surface is undulating, but considerably broken by ravines, and in some sections rough and stony. The streams are Little Salmon River and its branches. The elevation varies from 450 to 650 feet above tide. The soil consists of clay, sand, and gravel.

Products: Dairy products and hay.
The average value of farm land is $65 an acre.

PALERMO: The surface is undulating and the streams are small. The soil is generally a sandy loam.

Products: Dairy products and hay.
The average value of farm land is $65 an acre.

REDFIELD: The surface is hilly in the south; in the north it spreads out into a high, rolling plateau 1,300 to 1,600 feet above tide. A wide intervale extends along the course of Salmon River, which stream drains nearly the whole town. The underlying rock is gray limestone. The soil is generally a thin and moderately fertile gravelly loam; through the intervale it is a deep sandy loam of good quality.

Products: Dairy products, lumber and wood.
The average value of farm land is $35 an acre.

RICHLAND: The surface is generally level or gently undulating, broken by the ravines of the streams. The eastern part is 250 feet above Lake Ontario, which gives the town a westerly inclination. Salmon River and Deer and Grindstone creeks are the principal streams. The mouth of the Salmon River furnishes a good harbor. The soil is a sandy loam intermixed with clay in the southwestern part, and generally fertile.

Products: Dairy products.
The average value of farm land is $80 an acre.

SANDY CREEK: The surface is rolling. It has a westerly inclination, the eastern border being elevated about 500 feet above the surface of Lake Ontario. The town is drained by Little Sandy Creek and several smaller streams. North and South ponds, portions of Lake Ontario nearly landlocked, lie principally within the limits of this town. The soil consists of gravel, loam and disintegrated shale, and is generally productive.

Products: Dairy products.

The average value of farm land is $80 an acre.

SCHROEPPEL: The surface is level or gently rolling. The Oswego and Oneida rivers flow along the eastern, southern, and western borders. The soil is a rich sandy loam and clay.

Products: Dairy products, cabbage, hay and potatoes.

The average value of farm land is $80 an acre.

SCRIBA: The surface is rolling, the ridges extending north and south and elevated 400 to 500 feet above sea level. It is drained by Black Creek flowing south and by several streams flowing north. The soil is a gravelly and sandy loam, stony in places and moderately fertile.

Products: Dairy products, fruit and canning factory crops.

The average value of farm land is $75 an acre.

VOLNEY: The surface is undulating, with high, steep banks bordering on the Oswego River. The ridges rise from 400 to 500 feet above sea level. The soil is a sandy and gravelly loam. Near Fulton in this town lies the farm from which is obtained the Great Bear spring water.

Products: Dairy products and hay.

The average value of farm land is $75 an acre.

WEST MONROE: The surface is level and marshy in the south, the north being partly rolling, broken and stony. A marsh on the bank of Oneida Lake covers an area of more than 1,000 acres and a considerable portion of it produces cranberries. The soil is a medium quality of clayey, sandy, and gravelly loam.

Products: Dairy products and small fruits.

The average value of farm land is $60 an acre.

WILLIAMSTOWN: The surface is undulating in the south, broken and stony in the west, and moderately hilly in the east.

It is drained by Fish Creek flowing into Oneida Lake and by the head branches of Salmon River. The soil is a moderately fertile sandy or gravelly loam.

Products: Dairy products and potatoes.

The average value of farm land is $50 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

A line of the New York Central Railroad between Rome and Watertown passes through the eastern part of the county, connecting at Richland with a line running west through Oswego to Niagara Falls. This line also passes through Pulaski, where a third line runs to Syracuse.

Another line extends from Fulton to Syracuse.

The New York, Ontario and Western, and the Delaware, Lackawanna and Western run from Oswego through Fulton, the former passing along the north side of Oneida Lake and to all points south, and the latter extending to Syracuse and from there to points south.

Electric Roads and Waterways

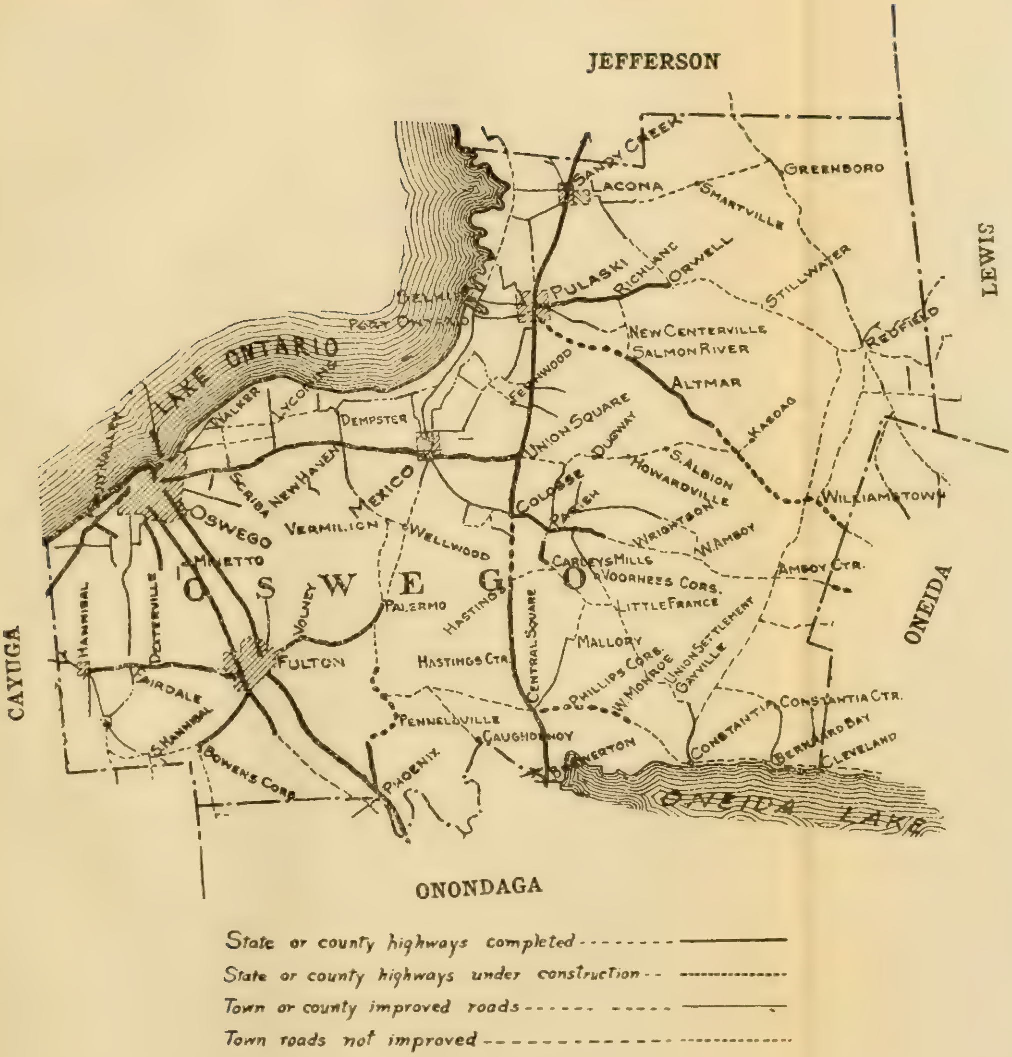
An electric line extends from Oswego southeast through Fulton to Syracuse. The Oswego Canal, which terminates at Oswego, connects with the Barge Canal on the southern border of the county. Lake Ontario affords valuable shipping facilities.

Improved Highways

Improved highways extend from Oswego as follows: one west into Wayne County; one south to Dexterville; two to Fulton, one of which continues to Syracuse; and one east through Mexico to Union Square. Through the latter points extends another road running between Syracuse and Watertown and passing through Pulaski. From Pulaski two additional improved highways extend — one east to Stillwater and one southeast almost to Camden. These roads, together with short sections which may be seen on the accompanying map, make a total of approximately 167 miles, 6 miles additional being under construction.

AVAILABLE MARKETS

The two cities of the county form the principal markets within the county limits. Oswego is the seat of the manufacture of


JEFFERSON
LEWIS
ONEIDA
CAYUGA
ONONDAGA
LAKE ONTARIO
ONEIDA LAKE
OSWEGO
Sandy Creek
Lacona
Greenboro
Smartville
Pulaski
Richland
Orwell
Stillwater
Redfield
Selkirk
Port Ontario
New Centerville
Salmon River
Altmar
Fernwood
Union Square
Dugway
Kasoag
S. Albion
Howardville
Williamstown
Dempster
Lycoming
Walker
Scriba
New Haven
Mexico
Colosse
Parish
Wrightsboro
W. Amboy
Amboy Ctr.
Oswego
Vermilion
Wellwood
Carleys Mills
Voorhees Cors.
Minetto
Hannibal
Dexterville
Volney
Palermo
Hastings
Little France
Mallory
Fulton
Hastings Ctr.
Central Square
Phillips Cors.
W. Monroe
Union Settlement
Gayville
Fairdale
S. Hannibal
Pennellville
Caughdenoy
Brewerton
Constantia
Constantia Ctr.
Bernhard Bay
Cleveland
Phoenix
Bowens Cors.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Kingsford Cornstarch and Diamond Matches, as well as the location of several foundries and boiler shops.

In Fulton are a number of woolen and paper mills. This city contains several beds of ginseng.

Syracuse forms another important outlet for Oswego County products.

A large part of the milk produced in Oswego County is manufactured as follows: 3½ million pounds of cheese, 18½ million pounds of condensed and evaporated milk, and large quantities of powdered whole and skim milk and powdered cream.

In Oswego County there are ten canning factories.

The agricultural organizations are as follows:

East Palermo Butter and Cheese Association.
Fulton Poultry and Pet Stock Association.
Granby Seed Potato Association.
Granges: Pomona and 38 subordinate granges.
Kasoag Potato Association.
Mallory Co-operative Association, Inc.
Oswego County Agricultural Society.
Oswego County Beekeepers' Association.
Oswego County Co-operative Association, Inc.
Oswego County Dairy Improvement Association.
Oswego County Dairymen's League.
Oswego County Farm Bureau Association.
Oswego County Fruit Growers' Association.
Oswego County National Farm Loan Association.
Oswego County Vegetable Growers' Association.
Patrons of Industry: 5 associations.
Sandy Creek, Richland, Orwell and Boylston Agricultural Society.

EDUCATIONAL FACILITIES

Oswego is the seat of a state normal school. Approved courses in agriculture are given at Hannibal, Mexico, and Pulaski, Hannibal including also a course in home making.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Central Square, Cleveland, Hannibal, Mexico, Minetto, New Haven, Oswego, Parish, Pulaski, Sandy Creek, and Williamstown.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	491,998 acres
Number of farms	6,319
Per cent of farm land improved	63.2

LIVE STOCK PRODUCTS

Milk sold	15,165,947 gal.
Cream sold	11,586 gal.
Butter fat sold	409,238 lbs.
Butter produced	412,270 lbs.
Eggs produced	1,598,527 doz.
Wool produced	3,394 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	13,529
Cattle	67,344
Sheep	6,009
Swine	13,848
Poultry	251,022

BEES

Number of colonies	2,602

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	14,411	491,706 bu.
Oats	20,591	504,314 bu.
Wheat	330	6,776 bu.
Barley	182	3.646 bu.
Buckwheat	3,808	71,594 bu.
Rye	524	6.771 bu.
Hay and forage	104,704	166.002 tons
Special Crops:		
Potatoes	7.507	997,874 bu.
Vegetables, other than potatoes	3,126	....
Dry edible beans	139	1.628 bu.
Dry peas	27	660 bu.
Fruits:		
Apples	269,724 trees	405,951 bu.
Peaches and nectarines	16,271 trees	9,421 bu.
Pears	101,412 trees	58,163 bu.
Plums and prunes	12,529 trees	8,335 bu.
Cherries	3,508 trees	3,461 bu.
Quinces	557 trees	77 bu.
Grapes	8,891 vines	160,299 lbs.
Small fruits	764 acres	1,488,157 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	6,353	5,766
LIVE STOCK AND POULTRY		
Horses and mules	12,863	11,147
Cattle	58,562	52,120
Sheep	2,651	2,237
Swine	8,921	8,947
Poultry	260,548	226,375
BEES		
Number of colonies	1,971	1,318

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	7,913	7,432	51,295 bu.
Oats	23,964	20,962	485,842 bu.
Barley	441	559	7,503 bu.
Buckwheat	5,632	6,402	77,695 bu.
Wheat (winter)	1,204	1,276	20,447 bu.
Wheat (spring)	104	276	3,553 bu.
Rye	1,184	1,208	13,308 bu.
Hay and Forage:			
Alfalfa	765	637	1,323 tons
Other hay	79,731	83,020	120,234 tons
Corn (ensilage)	12,581	11,303	70,730 tons
Corn (fodder)	....	4,097	....
Special Crops:			
Field beans	1,236	1,736	12,454 bu.
Cabbage	485	559	6,708 tons
Potatoes	5,977	7,030	596,807 bu.
Roots raised for stock food	....	392	....
Canning factory crops	1,981	1,480	....
Other vegetables and garden crops	1,312	2,214	....
Fruits:			
Apples	6,885	7,207	136,884 bu.
Peaches	109	190	2,714 bu.
Pears	1,663	1,790	60,001 bu.
Plums	53	239	29,191 lbs.
Cherries	232	261	50,613 lbs.
Quinces	....	6	91 bu.
Vineyard	38	40	97,292 lbs.
Small fruits	847	1,160	....

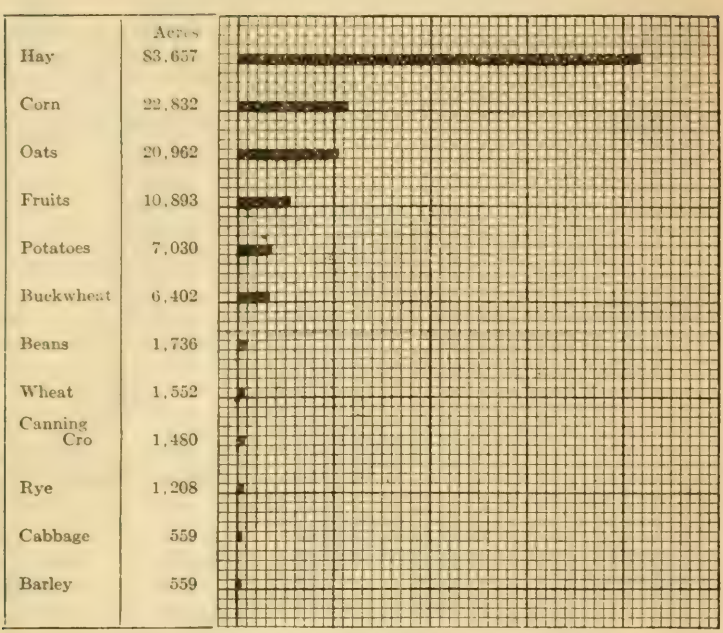
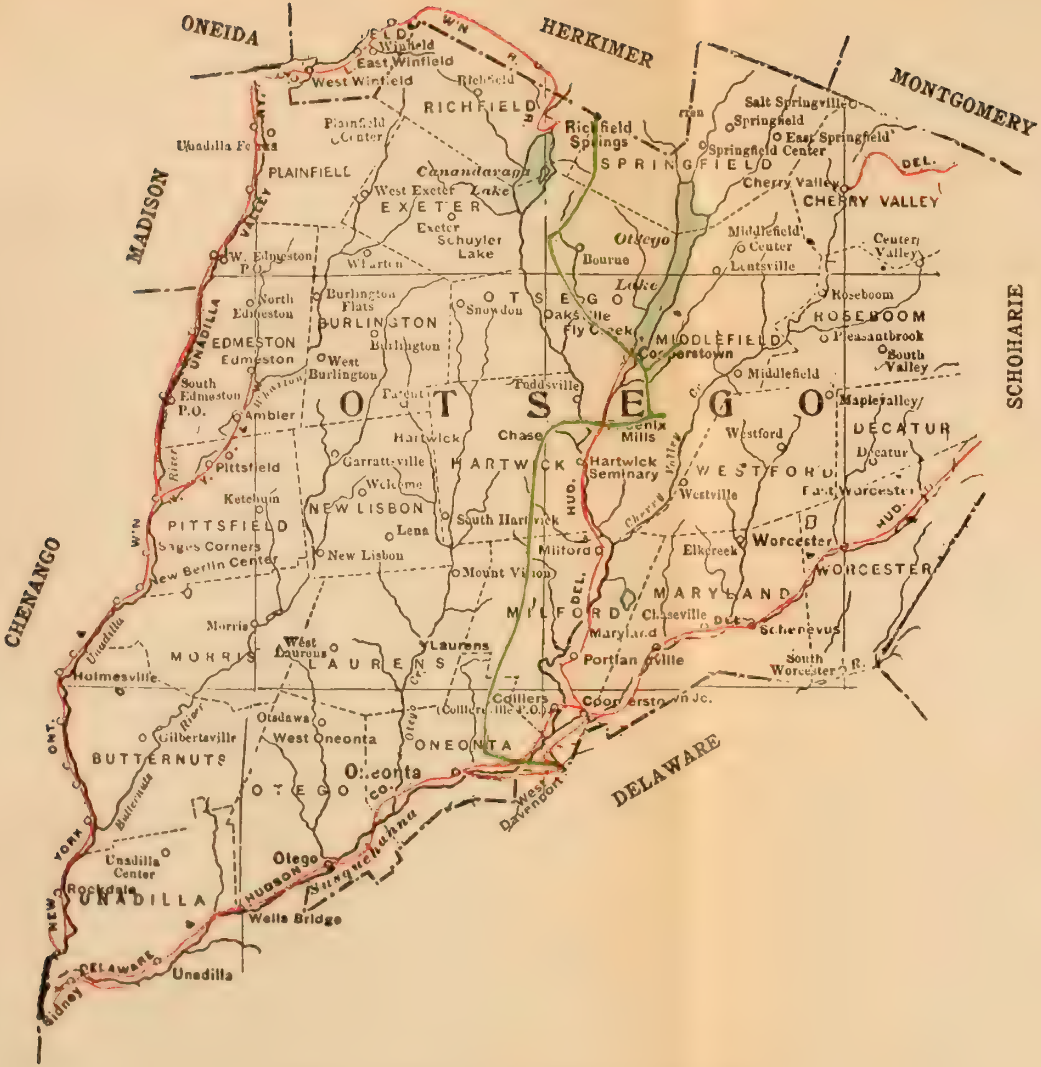


FIG. 122.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN OSWEGO COUNTY


ONEIDA
HERKIMER
MONTGOMERY
MADISON
SCHOHARIE
CHENANGO
DELAWARE
OTSEGO
Winfield
East Winfield
West Winfield
Richfield
RICHFIELD
Richfield Springs
Canandarago Lake
Plainfield Center
PLAINFIELD
Unadilla Forks
West Exeter
EXETER
Exeter
Schuyler Lake
Wharton
W. Edmeston P.O.
North Edmeston
EDMESTON
Edmeston
South Edmeston P.O.
Burlington Flats
BURLINGTON
Burlington
West Burlington
Snowdon
OTSEGO
Oaksville
Fly Creek
Otsego Lake
Bourne
Salt Springville
Springfield
East Springfield
Springfield Center
SPRINGFIELD
Cherry Valley
CHERRY VALLEY
Middlefield
Center
Lentsville
Center Valley
Roseboom
ROSEBOOM
Pleasantbrook
South Valley
MIDDLEFIELD
Cooperstown
Middlefield
Toddsville
Patent
Hartwick
Chase
Fenix Mills
Ambler
Pittsfield
Ketchum
PITTSFIELD
Sages Corners
New Berlin Center
Garrattsville
Welcome
NEW LISBON
Lena
New Lisbon
HARTWICK
Hartwick Seminary
South Hartwick
Milford
Mount Vision
MILFORD
Westford
WESTFORD
Westville
Maplevalley
DECATUR
Decatur
East Worcester
Worcester
WORCESTER
Elkcreek
MARYLAND
Chaseville
Maryland
Schenevus
South Worcester
Portlandville
Morris
MORRIS
West Laurens
LAURENS
Laurens
Holmesville
Gilbertsville
BUTTERNUTS
Otsdawa
West Oneonta
ONEONTA
Colliers
(Colliersville P.O.)
Cooperstown Jc.
Oneonta
OTEGO
Unadilla Center
Rockdale
UNADILLA
Otego
Wells Bridge
Unadilla
Sidney
West Davenport
Susquehanna
Delaware
Unadilla River
Butternuts
Cherry Valley
HUD.
DEL.
D. L. & W. R.
NEW YORK ONT. & W.
HUDSON
VALLEY

Map of Otsego County, Showing Townships

Red, railroads; green, electric roads

[illegible]
[illegible]

OTSEGO COUNTY

This county lies in the east central part of the state and contains the headwaters of the Susquehanna River system. It has an area of 645,760 acres. Its average extent from north to south in 30 miles, and from east to west 35 miles.

The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Oneonta (city)	10,474	Oneonta	1,527
Burlington	1,145	Otego	1,521
Butternuts	1,539	Otsego*	4,481
Cherry Valley	1,544	Pittsfield,	965
Decatur	437	Plainfield	873
Edmeston	1,682	Richfield	2,419
Exeter	967	Roseboom	867
Hartwick	1,943	Springfield	1,506
Laurens	1,410	Unadilla	2,457
Maryland	1,731	Westford	773
Middlefield*	1,671	Worcester	2,416
Milford	1,843		
Morris	1,367	Total	48,534
New Lisbon	976		

---

*Cooperstown, the county seat, is located in the towns of Middlefield and Otsego.

NOTE: Oneonta now has a population of 11,500.

HISTORICAL ASSOCIATIONS

Otsego County was erected from Montgomery in 1791. White men first explored the upper Susquehanna valley as early as 1616, but the first settlement was not made until 1740. This was at Cherry Valley, by John Lindesay, who with three others held a patent for a tract of 8,000 acres in that town. Mr. Lindesay was a Scotch gentleman, and by his influence a settlement was made comprising about thirty persons, originally from Scotland and Ireland. A few years later other small settlements were made, which formed the extreme western outposts in the advance of civilization. These increased very slowly because of fear of Indian hostilities.

During the Revolution, Cherry Valley, which then comprised about 300 persons, was attacked and devastated by tories and

Indians under the lead of Butler and Brant. Thus Otsego County, which had nearly a dozen white settlements at the beginning of the Revolution, was an uninhabited wilderness at its close. After that period the settlements quickly revived and the population increased rapidly, due no doubt to the fact that during Sullivan's raid central New York became better known to the whites than ever before.

DEVELOPMENT OF INDUSTRY

From the first settlement of the Unadilla valley its main articles of production for export have been butter and cheese. The natural depletion of dairy herds was supplied mainly by heifers raised by the farmers themselves, who, as a means of improving their herd, resorted to pure-bred cattle of various breeds. The Unadilla valley was the original home of Holstein cattle, and some of the best herds in the state are to be found in Otsego County.

This county is especially noted for its pure-bred cattle. The total membership of the county clubs, representing Jerseys, Guernseys, and Holsteins, is 128. The Ayrshire herds on the Iroquois Farm and that of Mr. Kent Barney, are among the best. Advanced registry work was developed in this county under the direction of Solomon Hoxie.

Otsego County was the first into which Cheviot sheep were imported. The largest flock in America is at present owned by Glimmerglen Farms at Cooperstown. Two of the best flocks of Shropshire sheep are also located in this county — one at Iroquois Farm, Cooperstown, and another at Pinehurst Farm, Springfield Center. Great interest in the sheep industry has been shown during the last five years, the number of sheep in the county increasing 18 per cent. This is largely due no doubt to the cooperative selling of wool and the increased prices received.

Thirty years ago Otsego produced more hops than any other county in the state. According to the 1917 census only 600 acres were cultivated in the entire county, mostly in the northern part.

The northern end of the county is the section best adapted to hay. From 800 to 1,000 cars are shipped annually from Richfield Springs and Cherry Valley to other sections. Clover and mixed hay are grown in all townships for feeding, as is also silage corn. Oats are also grown throughout the county. The southwestern portion of the county produces large quantities of potatoes, which are well adapted for seed for Long Island and New Jersey.

CLIMATE AND RAINFALL

Climatological records for Otsego County are taken from the Cooperstown station, at an elevation of 1,250 feet. The present observer is Miss Elizabeth C. Keese.

Average dates for the last killing frost in spring and the first in fall are May 9 and September 29, respectively, giving a growing season of 143 days.

The following table summarizes records covering a period of 63 years, beginning with the year 1854:

RECORD OF TEMPERATURE AND PRECIPITATION AT COOPERSTOWN

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	20.4	62	1906*	—33	1904	2.76	1.51	1915	15.7
February.....	20.2	57	1903	—28	1914	2.62	1.95	1910	18.4
March........	28.1	76	1907	—16	1912	2.85	1.85	1903	13.2
April.........	41.3	82	1903	14	1898	2.77	1.88	1910	3.1
May.........	54.5	87	1895	24	1902	3.66	2.70	1906	T.
June.........	63.6	90	1901	30	1913	4.23	3.24	1915	......
July..........	68.1	94	1911	39	1912	4.53	3.66	1903	......
August.......	65.4	90	1916*	36	1912*	4.18	2.80	1911	......
September....	58.4	87	1908	27	1913*	3.57	2.26	1912	......
October.......	46.8	80	1910*	19	1904	3.37	3.20	1903	3.9
November....	35.1	70	1895	0	1891	3.04	2.40	1898	5.5
December.....	24.9	62	1901	—15	1903	2.89	1.67	1900	14.4
Year.........	43.9	94	1911	—33	1904	40.47	3.66	1903	74.2

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is a hilly upland divided into several ridges separated by deep, broad valleys. In every township are found elevations of from 250 to 500 feet, among which flow a great number of small streams. The greatest elevations are in Cherry Valley township, where several hills rise more than 2,000 feet above tide.

The principal streams are the Unadilla River and its branches, Wharton and Butternut creeks; also the Susquehanna and its tributaries — Otego, Schenevus, Cherry Valley, and Oaks creeks. Otsego Lake, the largest body of water in this region, lies within the townships of Otego, Springfield, and Middlefield. It is eight miles long and about one mile wide, and lies about 1,200 feet above sea level. This lake has been made famous as the scene of Cooper's novels — "The Deerslayer" and "The Pioneer." Canadarago, or Schuyler Lake, and several small ponds also lie within the county.

Limestone is quarried in the northeast. In that section the soil is a good quality of gravelly, calcareous loam. Further south it is a clayey and shaly loam on the hills, and alluvium in the valleys.

DESCRIPTION BY TOWNSHIPS

BURLINGTON: The surface consists of a hilly upland with ridges extending north and south which attain an elevation of 400 to 500 feet above the valleys at various points. These ridges are arable to their summits. The principal streams are Butternut and Wharton creeks. The soil on the hills is a slaty loam, and in the valleys a gravelly loam. The leading industry is dairying, the milk being sent chiefly to the local cheese factories or to the Borden Condensary at Edmeston.

Products: Dairy products, hay, oats and corn.

Average values of farm land range from $30 to $50 an acre.

BUTTERNUTS: The surface is a hilly upland rising from the Unadilla River on the west in a series of steep bluffs, 500 or 600 feet in height. Butternuts Creek flows southwest through a deep valley near the center of the town. A large number of small streams flow near the valleys among the hills. These hills are arable to their summits, and the soil is a good quality of red shale and gravelly loam.

Products: Dairy products, and general farm crops.

Average values of farm land range from $40 to $50 an acre.

NOTE: The value of farm land varies widely within short distances throughout the whole county, especially in the southern part, depending on the condition and type of soil and buildings, and nearness to improved highways or markets. In nearly every town land values may range from $10 to $200 per acre.

CHERRY VALLEY: The surface is generally hilly. The highest elevations in the county are in this township, several points exceeding 2,000 feet in height. The central and southern parts are drained by the headwaters of the Susquehanna, while the northern part is drained by tributaries of the Mohawk. In the uplands the soil is a slaty, gravelly loam. In the valleys it is a fine quality of calcareous loam.

Products: Dairy products, hay and general farm crops.
Average values of farm land range from $40 to $50 an acre.

DECATUR: The surface is hilly, broken by the narrow valleys of several small streams. The hills generally have gradual slopes and rounded summits, the highest rising from 2,100 to 2,300 feet above sea level. The town is drained south by Oak and Parker creeks, flowing into the Schenevus. The soil is a sandy, gravelly loam.

Products: Potatoes, dairy products and general farm crops.
Average values of farm land range from $35 to $50 an acre.

EDMESTON: The surface is an elevated upland broken by numerous irregular valleys. The highest elevations are 1,500 to 1,600 feet above tide. The Unadilla River forms the western boundary and Wharton Creek flows across the southeast corner. Several small streams take their rise in this town. The soil is a sandy, clayey loam.

Products: Potatoes, hay and dairy products.
Average values of farm land range from $30 to $50 an acre.

EXETER: The surface is hilly and broken, consisting mainly of elevated uplands, some of them 1,800 to 2,000 feet above sea level. The town is drained east by several small streams flowing into Canadarago Lake, and south by Wharton Creek. The soil is a clayey and gravelly loam, well adapted to grazing.

Products: Hay and dairy products.
Average values of farm land range from $35 to $45 an acre.

HARTWICK: The surface is a hilly upland, its highest summits rising 1,700 to 1,900 feet above sea level. It is drained by several small streams flowing into the Susequehanna, and by the east branch of Otego Creek. The soil is chiefly a sandy, gravelly loam, with an occasional mixture of clay.

Products: Potatoes, peas and dairy products.

Average values of farm land range from $40 to $50 an acre.

LAURENS: With the exception of the broad valley of Otego Creek, the surface is high and hilly. It is drained south by Otego Creek and several tributaries. The soil is a sandy and gravelly loam, in some parts slaty and generally productive.

Products: Dairy products and general farm crops.

Average values of farm land range from $30 to $50 an acre.

MARYLAND: The surface is a hilly upland, broken by the deep ravines of streams. South Hill, a steep unbroken ridge 350 to 500 feet above the valleys, extends along the south bank of the Schenevus, and from its summit the surface spreads out into a rocky broken upland. Schenevus Creek flows southwest through the center and receives several tributaries from the north. The soil is principally a sandy loam, best adapted to grazing.

Products: Potatoes and dairy products.

Average values of farm land range from $40 to $50 an acre.

MIDDLEFIELD: The surface is a hilly upland descending abruptly to Otsego Lake and Outlet, which lie on the west. The summits of the hills are 400 to 600 feet above the valleys. Cherry Valley Creek flows through the east part of the town. The soil is a sandy, gravelly loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $50 an acre.

MILFORD: The surface is divided into two distinct ridges by the deep valley of the Susquehanna, which is bordered by steep hillsides. Crumhorn Lake lies on the summit of Crumhorn Mountain approximately 1,800 feet above sea level. The soil is a sandy, gravelly loam.

Products: Potatoes and dairy products.

Average values of farm land range from $40 to $50 an acre.

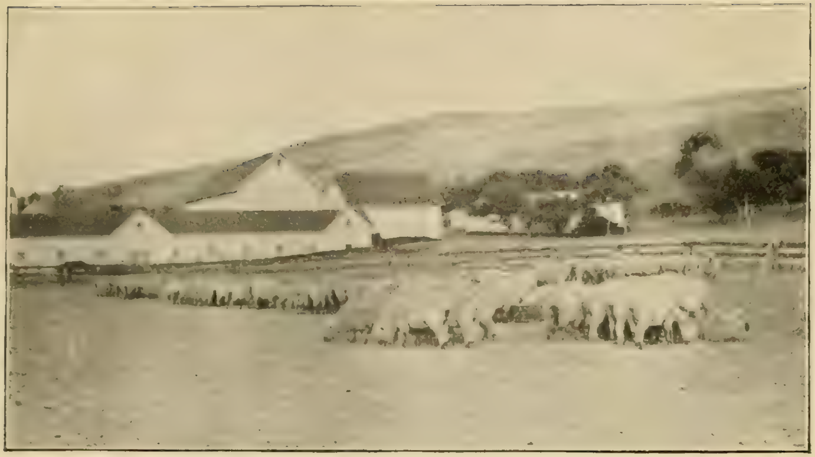


FIG. 123.— SHROPSHIRE LAMBS ON FARM OF F. AMBROSE CLARK, NEAR COOPERSTOWN

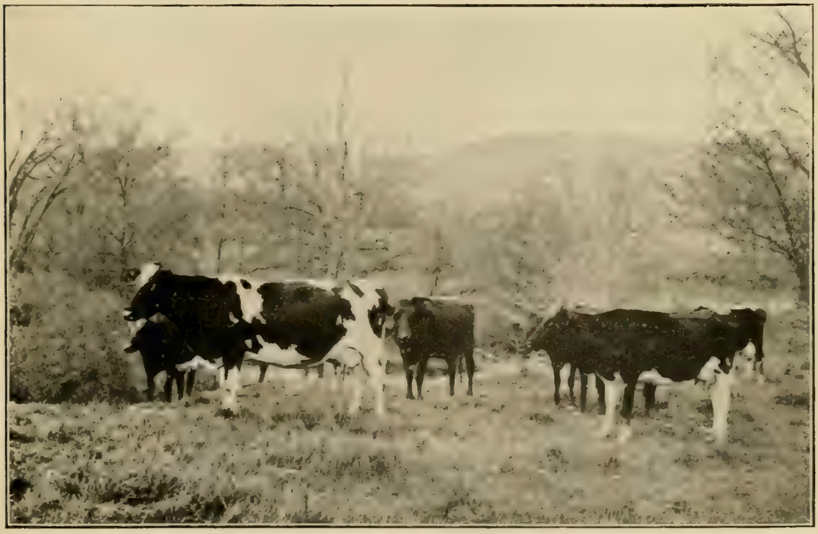


FIG. 124.— HOLSTEINS IN PASTURE ON FARM OF HENRY BRADLEY, MILFORD, OTSEGO COUNTY

MORRIS: The surface is varied, rising in broken uplands on either side from the fertile valley of Butternut Creek. The western ridge terminates in a series of steep bluffs bordering on the Unadilla River. The soil on the uplands is composed of clay, gravel, and disintegrated slate. In the valleys it is a gravelly loam. At Morris is established the manufacturing plant of the Linn Tractor Company, which is especially adapted for hauling purposes.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $50 an acre.

NEW LISBON: The surface is a hilly upland divided into several ridges by the deep ravines of the streams. The highest summits are 300 to 500 feet above the valleys. Butternut and Otego creeks are the principal streams. The soil on the uplands is a clayey and slaty loam. In the valleys it is a gravelly loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $20 to $50 an acre.

ONEONTA: The surface is a hilly upland, broken by the deep valley of the Susquehanna, which extends through the southern part. Otego Creek and several small streams flow into the Susquehanna from the north. A range of hills 500 feet high extends along the southeast bank of the Susquehanna. The center and northern part are hilly and broken by narrow irregular valleys. The summits of these hills are 150 to 300 feet above the valleys. The soil is gravel, slate, and clay on the uplands and gravelly loam and alluvium in the valleys.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $50 an acre.

OTEGO: The surface is a hilly upland divided by the Susquehanna, which flows through the southern part. The northern part is separated into ridges 200 to 400 feet high extending north and south. The town is drained by Mill Creek and several smaller streams. The soil is a clayey and sandy loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $50 an acre.

OTSEGO: The surface is a hilly upland lying between Otsego and Schuyler lakes, descending abruptly toward each. The highest summits reach an elevation of 1,800 feet, the uplands being divided into two ridges by Fly Creek, which flows south through the center. Oaks Creek, the outlet of Canadarago Lake, flows through the western part. The soil is clay, gravel, and sandy loam. Added to its natural beauty of situation and its advantages as a summer resort, the village of Cooperstown claims the romantic interest attached to the scenes of Leather Stocking Tales as related by James Fenimore Cooper, whose father purchased the land and laid out the present village.

Products: Dairy products, hay and general farm crops.

Average values of farm land range from $40 to $50 an acre.

PITTSFIELD: The surface is a hilly upland lying between the valley of Unadilla River on the west and Butternut Creek on the east. Wharton Creek flows across the northwest corner. The soil is generally a slaty, gravelly loam. The township is chiefly devoted to dairying, the milk being sent either to the condensary at New Berlin or to the shipping station at Edmeston.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $50 an acre.

PLAINFIELD: The surface is a broken, hilly upland, the bluffs along the Unadilla River on the west rising to a height of 400 to 600 feet. The average elevation is 1,500 to 1,800 feet. The soil is a clayey and sandy loam.

Products: Dairy products, hay and general farm crops.

Average values of farm land range from $35 to $45 an acre.

RICHFIELD: The surface is rolling and moderately hilly, with a mean elevation of 200 to 400 feet above Canadarago or Schuyler Lake on the southeast. Several wooded mountain peaks near the eastern boundary rise to a height of 1,600 to 1,800 feet. The soil is diversified, consisting of gravel, slate, clay and sandy loam.

Products: Hay, dairy products and general farm crops.

Average values of farm land range from $35 to $45 an acre.

Roseboom: The surface is a hilly upland broken by the valleys of several streams. The hills are generally rounded, the highest in the southern part reaching an elevation of 2,200 feet. The soil is a gravelly loam. Dairying and cheesemaking are prominent industries.

Products: Dairy products and general farm crops.

Average values of farm land range from $35 to $50 an acre.

Springfield: The surface is a rolling and moderately hilly upland, the hills generally rising about 200 feet above the valleys. A promontory east of the head of Otsego Lake called Mt. Wellington rises to a height of 1,900 feet. The streams are small brooks. The soil is a black and yellow loam resting upon limestone and slate.

Products: Hay and dairy products.

Average values of farm land range from $40 to $50 an acre.

Unadilla: The surface is a rolling and hilly upland the highest summits being 400 to 500 feet above the valleys. Unadilla River on the west, Susquehanna River on the east, and Sandy Hill Creek in the eastern part are the principal streams. The soil in the valleys is an alluvial loam, and on the uplands a slaty and gravelly loam.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $50 an acre.

Westford: The surface is hilly, the highest summits rising 250 to 400 feet above the valleys and 2,100 feet above sea level. It is drained south by Elk Creek, and west by tributaries of Cherry Valley Creek. The soil is a sandy loam of good quality.

Products: Potatoes and dairy products.

Average values of farm land range from $35 to $50 an acre.

Worcester: The surface is a hilly upland, the southern part of the town being occupied by highlands which descend abruptly to the north. The principal streams are Charlotte River and its tributaries and Schenevus Creek. The soil is a sandy loam.

Products: Potatoes and dairy products.

Average values of farm land range from $40 to $50 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Delaware and Hudson passing between Albany and Binghamton extends through all of the southern towns of the county. A branch runs north through the towns of Milford and Hartwick to Cooperstown and another branch enters the town of Cherry Valley.

The Ulster and Delaware connects with the Delaware and Hudson at Oneonta, as does also the New York, Ontario and Western at Sidney. From this point the latter road extends north through the Unadilla and Wharton valleys to Edmeston.

The Unadilla Valley Road extends north from New Berlin to Bridgewater, where it meets the Delaware, Lackawanna and Western, this road continuing north to Utica and easterly to Richfield Springs in the town of Richfield.

Electric Roads

The electric line of the Southern New York Power & Railway Corporation extends from Oneonta northerly through the center of Otsego County to Mohawk, with a short branch extending from Index to Cooperstown.

Improved Highways

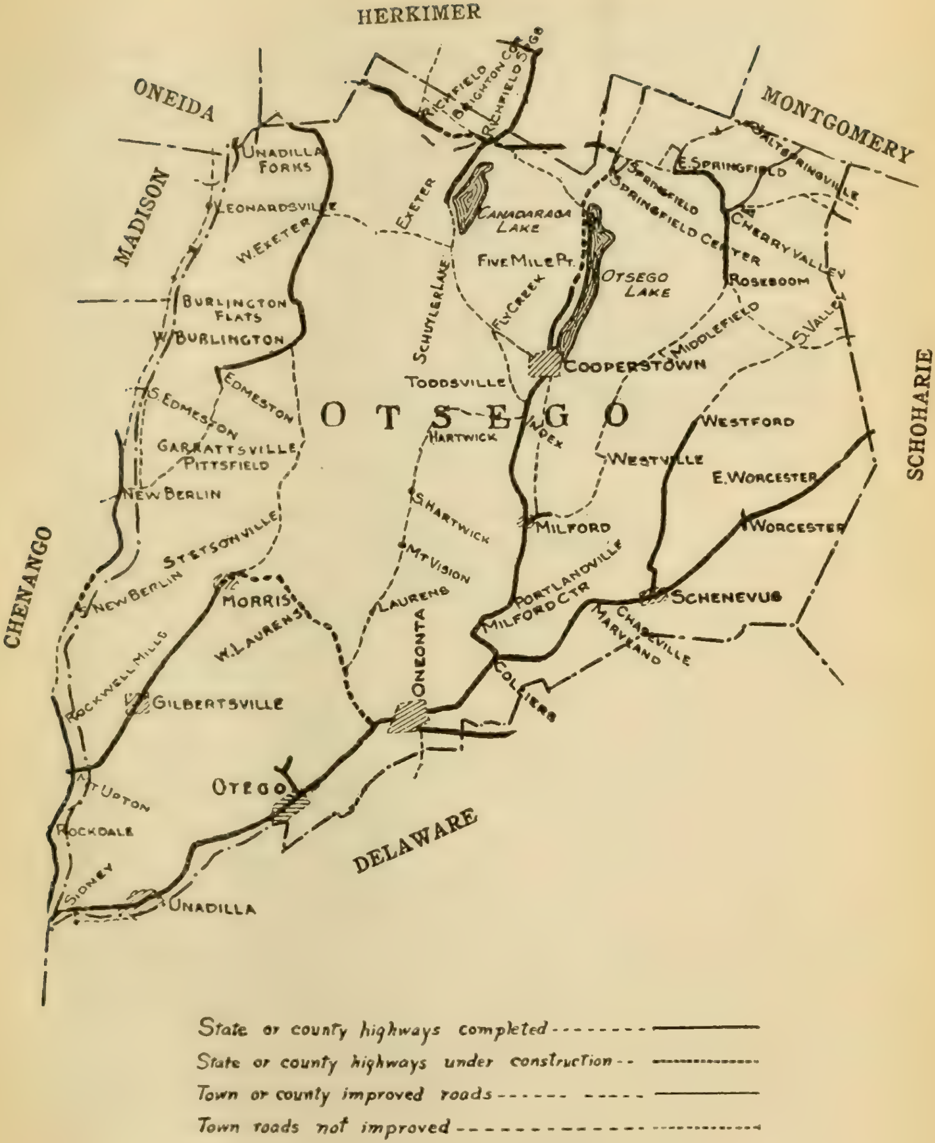
An improved highway from Albany enters the eastern part of the county and extends through Schenevus, Oneonta, Otego, and Unadilla to Binghamton. From Oneonta a road leads southeasterly through Delaware County.

There is under construction another road running northwest from Oneonta to Morris, which will there join a road running southwest from this point through Gilbertsville and into Chenango County.

A macadam road leads direct from Colliers to Milford and Cooperstown, and continues north halfway along Otsego Lake.

Additional improved highways are in the northeast between East Springfield and Roseboom, and in the northwest between West Winfield and Edmeston, besides a short section along Schuyler Lake.

There are in the county 99 miles of completed improved highways, 29 additional being under construction.


HERKIMER
ONEIDA
MADISON
MONTGOMERY
SCHOHARIE
CHENANGO
DELAWARE
OTSEGO
Unadilla Forks
Leonardsville
W. Exeter
Burlington Flats
W. Burlington
Edmeston
S. Edmeston
Garrattsville
Pittsfield
New Berlin
Stetsonville
S. New Berlin
Morris
W. Laurens
Rockwell Mills
Gilbertsville
Mt. Upton
Rockdale
Sidney
Unadilla
Otego
Oneonta
Laurens
Mt. Vision
S. Hartwick
Hartwick
Toddsville
Schuyler Lake
Exeter
Richfield
Richfield Spgs
Brighton Cor.
Canadarago Lake
Five Mile Pt.
Fly Creek
Otsego Lake
Cooperstown
Index
Milford
Portlandville
Milford Ctr
Colliers
Maryland
Chaseville
Schenevus
Worcester
E. Worcester
Westville
Westford
Middlefield
S. Valley
Roseboom
Cherry Valley
Springfield Center
Springfield
E. Springfield
Salt Springville
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

AVAILABLE MARKETS

Oneonta is a railroad and manufacturing center of considerable importance. Among its products are included gloves, knit goods, and articles of men's clothing. This city is the seat of a state normal school.

At both Oneonta and Cooperstown the Nestle's Food Company handles a very large proportion of the milk produced in the county. Apples, potatoes, etc. are sent to points in the Mohawk valley. New York City receives large quantities of milk, also potatoes and peas.

Within Otsego County there are 46 milk establishments. Market milk is sold, and there is manufactured about 2,000,000 pounds of American cheese besides large quantities of Limburger, Swiss and fancy cheeses. Nearly 30,000,000 pounds of condensed and evaporated milk is also manufactured.

The agricultural organizations are as follows:

Burlington Maple Products Cooperative Association, Inc.
Chenango National Farm Loan Association.
Fort Dayton National Farm Loan Association.
Granges: Pomona and twenty-seven subordinate granges.
Laurens Stallion Association.
Morris Fair Association.
Mt. Vision Cooperative Creamery Co.
Oneonta Union Agricultural Society.
Otego Dairymen's Cooperative Association, Inc.
Otsego and Herkimer Cooperative Association, Inc.
Otsego County Agricultural Society.
Otsego County Beekeepers' Society.
Otsego County Dairymen's League.
Otsego County Farm Bureau Association.
Otsego County Guernsey Cattle Club.
Otsego County Holstein Club.
Otsego County Improvement Association.
Otsego County Jersey Cattle Club.
Otsego County National Farm Loan Association.
Otsego County Sheep Breeders' Association.
Otsego No. 1 Dairy Improvement Association.
Richfield Springs Agricultural Society.
Tri-County Holstein-Friesian Breeders' Association.

EDUCATIONAL FACILITIES

A state normal school is located at Oneonta. Hartwick Seminary is a theological school in Otsego County. At Edmeston, Maryland, Westford, and Worcester are schools giving approved courses in agriculture, the last three including also courses in home making.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Cooperstown, East Springfield, East Worcester, Edmeston, Gilbertsville, Hartwick, Laurens, Maryland, Milford, Morris, Oneonta, Otego, Richfield Springs, Schenevus, Schuyler Lake, Springfield Center, Unadilla, Unadilla Forks, Westford, and Worcester.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	592, 531	acres
Number of farms	5,346	
Per cent of farm land improved	75.4	

LIVE STOCK PRODUCTS

Milk sold	21,916, 670	gal.
Cream sold	24,108	gal.
Butter fat sold	1,188, 927	lbs.
Butter produced	235, 773	lbs.
Cheese produced	1,258	lbs.
Eggs produced	2,201,158	doz.
Wool produced	5,962	fleeces

LIVE STOCK AND POULTRY

	Number
Horses	13, 258
Cattle	84, 116
Sheep	10, 108
Swine	14,102
Poultry	303,901

BEES

Number of colonies	2,071

SELECTED CROPS

Cereals:	Acres	Yield
Corn	7, 695	308, 096 bu.
Oats	28,742	827,095 bu.
Wheat	34	621 bu.
Barley	633	17, 280 bu.
Buckwheat	8, 450	188, 855 bu.
Rye	130	2, 395 bu.
Hay and forage	158, 490	254, 991 tons

Special Crops:	Acres	Yield
Potatoes	7,946	1,059,120 bu.
Vegetables, other than potatoes	1,446	....
Dry edible beans	41	1,325 bu.
Dry peas	11	296 bu.

Fruits:		
Apples	194,986 trees	282,384 bu.
Peaches and nectarines	60 trees	19 bu.
Pears	10,358 trees	8,965 bu.
Plums and prunes	10,569 trees	3,525 bu.
Cherries	4,021 trees	1,037 bu.
Quinces	32 trees	....
Grapes	1,265 vines	37,272 lbs.
Small fruits	132 acres	184,098 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,767	4,389

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	12,314	10,562
Cattle	74,022	68,448
Sheep	8,439	6,220
Swine	9,191	6,934
Poultry	383,547	293,642

BEES

	1917 Number	1918 Number
Number of colonies	2,206	3,202

SELECTED CROPS

Cereals:	1917 Acres	1918 Acres	1918 Bushels
Corn	4,344	5,039	90,975
Oats	30,348	22,070	565,193
Barley	1,539	1,400	22,497
Buckwheat	8,467	8,887	99,700
Wheat (winter)	552	368	5,763
Wheat (spring)	290	882	5,743
Rye	322	175	1,923

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	1,515	1,470	4,197 tons
Other hay	144,142	130,063	169,650 tons
Corn (ensilage)	11,430	9,008	65,840 tons
Corn (fodder)	....	2,496	....
Special Crops:			
Field beans	515	1,412	7,174 bu.
Cabbage	837	590	5,589 tons
Potatoes	7,581	7,519	453,653 bu.
Roots raised for stock food	....	390	....
Canning factory crops	325	144	....
Other vegetables and garden crops	1,063	1,030	....
Fruits:			
Apples	4,157	5,673	188,786 bu.
Peaches	5	....	....
Pears	142	73	2,128 bu.
Plums	80	228	13,931 lbs.
Cherries	86	123	3,912 lbs.
Vineyard	22	26	774 lbs.
Small fruits	514	748	....

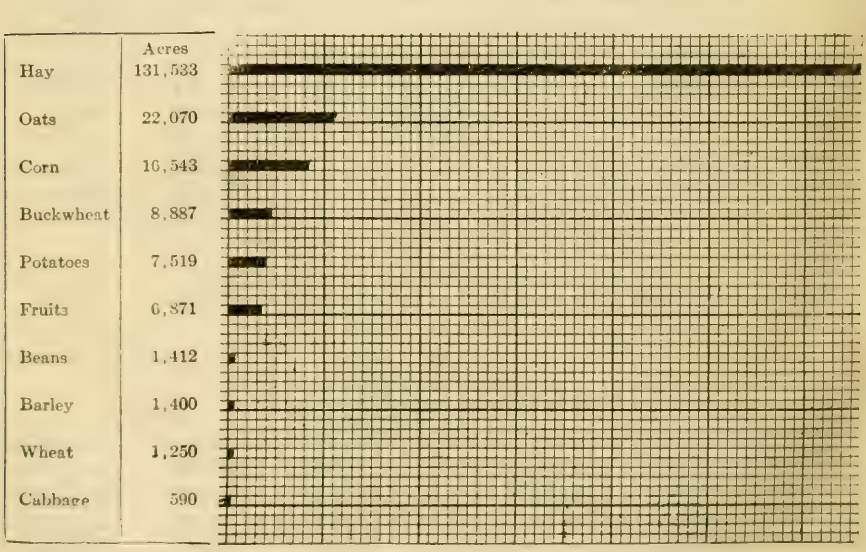
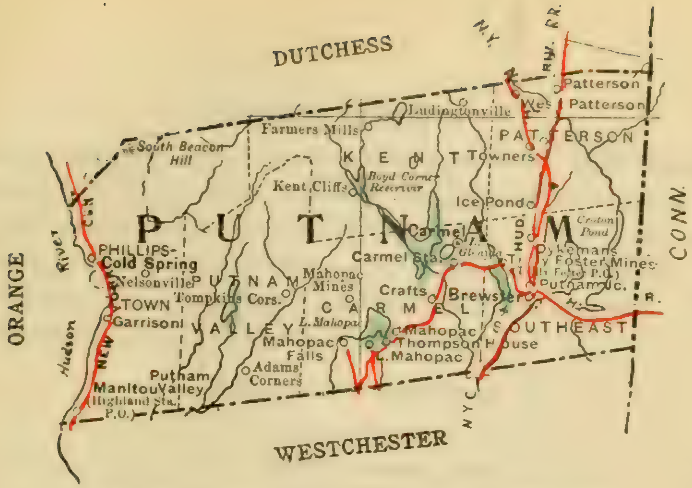
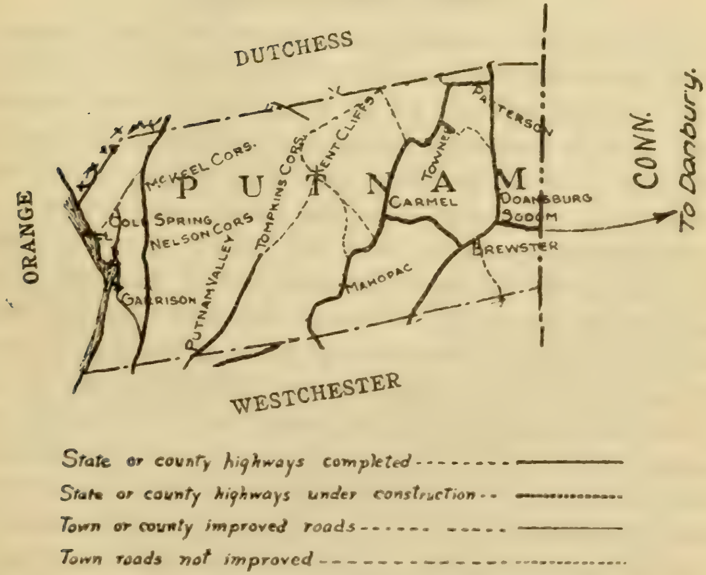


FIG. 125.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN OTSEGO COUNTY


DUTCHESS
N.Y.
RW. RR.
Patterson
West Patterson
Ludingtonville
Farmers Mills
South Beacon Hill
K E N T
Towners
P A T T E R S O N
Kent Cliffs
Boyd Corners Reservoir
Ice Pond
Croton Pond
P U T N A M
Carmel
Carmel Sta.
Lake Gleneida
HUD.
Dykemans
Foster Mines
Putnam Jc.
PHILLIPS-
Cold Spring
Nelsonville
TOWN
Tompkins Cors.
Mahopac Mines
Crafts
Brewster
C A R M E L
Garrison
V A L L E Y
L. Mahopac
Mahopac
Mahopac Falls
Thompson House
L. Mahopac
S O U T H E A S T
Adams Corners
Putnam Valley
Manitou
Highland Sta. P.O.
River
Hudson
NEW
N.Y.C.
ORANGE
CONN.
R.
WESTCHESTER

Map of Putnam County, Showing Townships
Red lines indicate railroads


DUTCHESS
PATTERSON
TOWNERS
McKEEL CORS.
KENT CLIFFS
TOMPKINS CORS.
P U T N A M
CARMEL
DOANSBURG
SODOM
BREWSTER
COLD SPRING
NELSON CORS.
PUTNAM VALLEY
MAHOPAC
GARRISON
ORANGE
CONN.
To Danbury.
WESTCHESTER
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

PUTNAM COUNTY

This county lies in the southeastern part of the state between Dutchess and Westchester, with the Hudson River forming its western boundary, and the state of Connecticut lying on the east. Its area is about 149,120 acres. It extends approximately 22 miles from east to west, and 11 miles from north to south. The population is shown in the following table:

POPULATION BY TOWNSHIPS

(Census of 1915)

Carmel*	2,737	Putnam Valley	992
Kent	854	Southeast	3,162
Patterson	1,451		
Phillipstown	3,571	Total	12,767

---

* Carmel, in the town of Carmel, is the county seat.

HISTORICAL ASSOCIATIONS

Putnam County was set off from Dutchess County in 1812 and named after General Israel Putnam, under whom many of the landowners therein had served during the Revolutionary War.

In 1697 Adolph Philipse, a wealthy merchant of New York, whose family already held large grants of lands in the lower part of Westchester County, and were there lords of the manor, received a further patent for most of the present county of Putnam, generally known under the name of "Philipse Upper Patent," or the "Highland Patent." That grant reached from Anthony's Nose northward along the east bank of the North River to the mouth of Fishkill Creek and extended eastward from the river practically to the bounds of Connecticut. Just east of the Philipse Patent there was at that time in dispute between Connecticut and New York a narrow strip known as the "Equivalent Lands" or the "Oblong." To so much thereof as lay within the north and south lines of the Philipse Upper Patent, his heirs received a further grant shortly before the Revolution.

Although during the Revolution Putnam County was regarded as a point of vital military importance, no battle took place within its limits. It was, however, the scene of many events of minor importance, as well as the principal scene of the consummation of Arnold's treason.

On Constitution Island, which lies on the northwest border, was attached one end of the great chain stretched across the river from West Point. At the end of the war it was on this same island that Washington's body guard was mustered out of service. In modern times Constitution Island has been famous as the residence of the well-known authoresses, Susan B. and Anna B. Warner. "The Wide, Wide World" has had a popularity exceeded by few works written in America.

DEVELOPMENT OF INDUSTRY

The Revolution changed the whole of Putnam County from a manorial grant occupied and cultivated by tenants to an ownership in fee by those tenants and others who had bought at confiscation sale. Proximity to New York and facilities for water transportation by the river led the farmers of Putnam into general or mixed farming. This condition continued until about 1830, when the opening of the Erie Canal brought into competition the richer and more easily cultivated lands of the Mohawk valley and of the western counties of this state. That change forced Putnam County farmers into dairying, which they carried on successfully until about 1850, when the opening of the Hudson River Railroad and its connection with the New York Central at Albany had a damaging effect on the dairy business in Putnam. Many of the farmers then followed the destructive practice of selling off their cattle and cropping their lands year after year without restoring anything to them, until there came to be in many parts of the county a deplorable condition of abandoned farms, much as there is throughout a large part of New England. Of late years, however, there has been an improvement in that condition.

The principal industry is dairying and the production of milk, especially in the eastern part. Other products include hay, grain, potatoes, and poultry products. The western part of the county is largely a residential section.

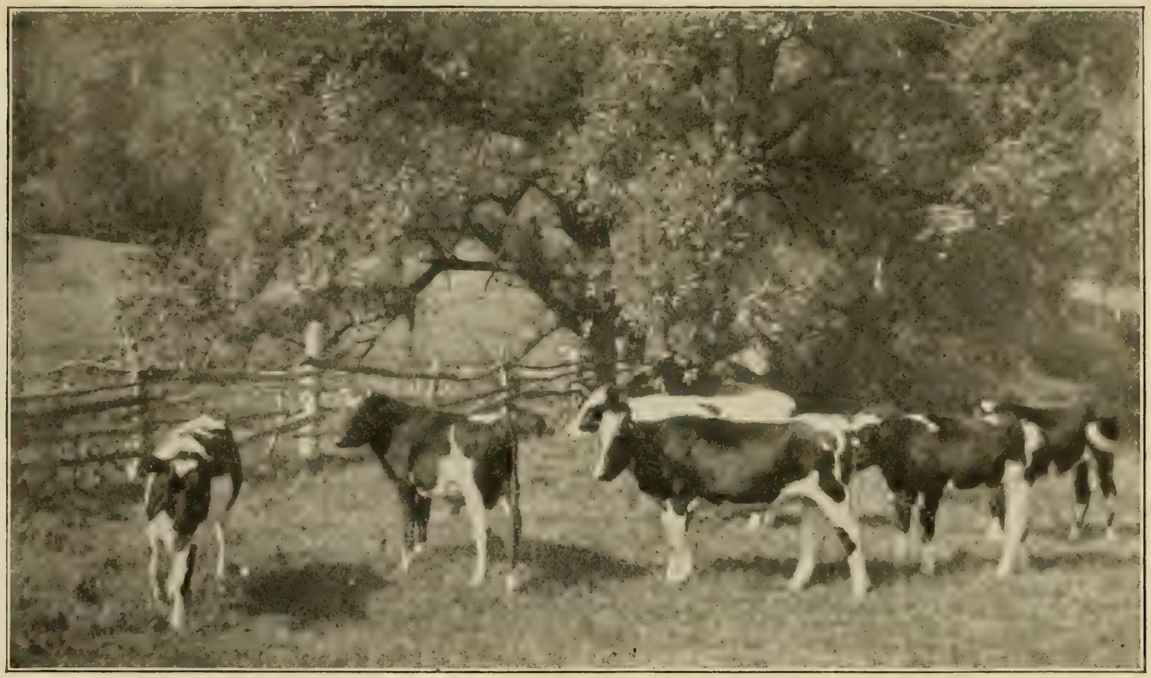


FIG. 126.— YOUNG HOLSTEINS ON FARM OF C. E. CLINTON, PUTNAM VALLEY, PUTNAM COUNTY

CLIMATE AND RAINFALL

Climatological records for Putnam County are taken from the Carmel station, which lies at an elevation of 500 feet. The present observer is Thomas Manning.

The average dates of the last killing frost in spring and the first in fall are April 30 and October 12, respectively, giving a growing season of 165 days.

The following table covers the period from 1900 to 1918, with the exception of the average temperature and precipitation, which began one year earlier:

RECORDS OF TEMPERATURE AND PRECIPITATION AT CARMEL

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	24.5	62	1916	—20	1904	3.86	2.63	1910	9.5
February	24.1	57	1900	—23	1907	4.14	3.37	1900	12.0
March	34.0	82	1905	—14	1916	4.74	3.19	1906	8.8
April	46.8	88	1915	18	1911	4.08	2.66	1906	3.5
May	58.4	91	1914*	25	1907	4.16	5.57	1900	......
June	66.7	93	1901	37	1910	3.83	2.64	1903	......
July	71.9	100	1911	45	1918	4.80	3.31	1906	......
August	69.6	99	1918*	42	1909	5.31	3.71	1911	......
September	63.0	96	1900	31	1914	3.97	6.52	1904	......
October	51.4	83	1910*	22	1911*	4.12	6.53	1903	T.
November	39.4	72	1909	10	1903*	3.28	3.07	1903	1.9
December	28.6	65	1912	—19	1917	4.10	2.34	1909	10.6
Year	48.2	100	1911	—23	1907	50.39	6.53	1903	46.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

Putnam County embraces nearly all of the Highlands east of the Hudson. The mountains consist of several steep, rocky ranges extending in a northeast and southwest direction and separated by deep, narrow valleys, the principal of which are Peekskill Hollow and Canopus and Annsville valleys.

The county is watered by the principal branch of Croton River and several smaller streams. Among the mountain valleys are numerous picturesque lakes, the largest of which are lakes Mahopac, Oscawana and Gleneida.

In the valleys the soil is a productive sandy loam, but the mountains are rocky and unfit for cultivation.

DESCRIPTION BY TOWNSHIPS

CARMEL: The surface is rolling and hilly, the valleys extending generally north and south. The West Branch of the Croton River flows through the eastern part of the town, Muscoot River through the western part, and Peekskill Hollow Creek through the northwestern part. In the town are several beautiful lakes — Mahopac, Gleneida, Gilead, Kirk Lakes, and Long Pond.

Products: Dairy products, corn, oats, potatoes, buckwheat, rye and hay.

Average values of farm land range from $100 to $150 per acre.

KENT: The surface is broken in the eastern part by numerous hills and in the west by steep rocky mountain peaks, separated by deep narrow ravines. The branches of Croton River and Horse Pond Brook are the principal streams. There are several ponds and small lakes in the town.

Products: Dairy and general farm products.

Average values of farm land range from $25 to $75 an acre.

PATTERSON: The surface is hilly, and with few exceptions the hills are arable to their summits. The principal streams are the East Branch of Croton River and its tributaries.

Products: Dairy products, hay, corn, oats, potatoes and apples.

Average values of farm land range from $50 to $150 per acre.

PHILLIPSTOWN: The surface is broken by numerous steep and rocky mountain ranges, separated by deep narrow valleys. These mountains constitute the most elevated portions of the Highlands, including Bull Hill, 1,425 feet in height. Several creeks flow through narrow ravines into the Hudson. The greater part is unfit for agricultural purposes. The soil is a gravelly, sandy and clayey loam. This is largely a residential town.

Products: General farm products.

Average values of farm land range from $50 to $100 an acre.

PUTNAM VALLEY: The surface is broken by steep, rocky mountain ridges extending in a northeasterly and southwesterly direction. The principal streams are Sprout and Oscawana Lake brooks, and Peekskill Hollow Creek. Lake Oscawana lies near the center of the town. The soil in the valleys is a moderately fertile sandy and gravelly loam.

Products: Corn, potatoes, rye, hay, buckwheat, oats, wheat and dairy products.

Average values of farm land range from $25 to $100 per acre.

SOUTHEAST: The surface is rolling and hilly. The streams are the east and middle branches of Croton River and their tributaries. Several small lakes and ponds lie among the hills. The soil is a sandy and gravelly loam. The town is generally a residential section. Brewster is an important railroad center.

Products: Dairy products.

Average values of farm land range from $100 to $150 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

The Hudson River division of the New York Central Railroad passing between New York and Albany extends through the western part of Putnam County. The Harlem division, which connects with the Boston and Albany at Chatham, extends through the eastern towns, two lines from New York making a junction at Brewster. At this point it connects with the New York, New Haven and Hartford, which extends north and west to Hopewell Junction in Dutchess County and east to points in the New England states. A branch runs to Mahopac Falls. The electric line of the Putnam and Westchester Traction Company enters the town of Putnam Valley. This county also shares in the shipping facilities afforded by the Hudson River.

Improved Highways

The improved highway known as the old "Post Road" from Albany to New York passes through the west side of the county. Another improved highway extends between Putnam Valley and Tompkins Corners. A third system of improved highways in the eastern part of the county passes through Patterson, Brewster, Towners, Carmel, and Mahopac. There are in the county 62 miles of completed improved highways.

AVAILABLE MARKETS

Farm products are generally consumed within the county. New York City, which is readily accessible, absorbs produce not needed for local requirements.

The milk produced in Putnam County is sold largely as market milk. Italian and Greek cheese is manufactured to a limited extent.

The agricultural organizations are as follows:

Dutchess County National Farm Loan Association.
Granges: Pomona and six subordinate granges.
Putnam County Dairymen's League.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Brewster, Carmel, Cold Spring, Mahopac, and Patterson.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	109,703	acres
Number of farms	973	
Per cent of farm land improved	52.7	

LIVE STOCK PRODUCTS

Milk sold	3,925,956	gal.
Cream sold	4,593	gal.
Butter fat sold	61,278	lbs.
Butter produced	62,531	lbs.
Cheese produced	100	lbs.
Eggs produced	304,821	doz.
Wool produced	614	fleeces

LIVE STOCK AND POULTRY

	Number
Horses	2,195
Cattle	12,239
Sheep	1,220
Swine	2,392
Poultry	50,167

BEES

Number of colonies	366

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	2, 395	124, 328 bu.
Oats	710	19, 022 bu.
Wheat	17	250 bu.
Barley	3	22 bu.
Buckwheat	172	3, 161 bu.
Rye	254	4, 559 bu.
Hay and forage	24, 313	29, 087 tons
Special Crops:		
Potatoes	863	85, 494 bu.
Vegetables, other than potatoes	327	......
Fruits:		
Apples	48, 483 trees	121, 815 bu.
Peaches and nectarines	4, 698 trees	2, 095 bu.
Pears	3, 149 trees	1, 955 bu.
Plums and prunes	2, 353 trees	1, 046 bu.
Cherries	2, 147 trees	505 bu.
Quinces	485 trees	201 bu.
Grapes	2, 134 vines	12, 060 lbs.
Small fruits	8 acres	14, 323 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	703	644

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	1, 511	1, 233
Cattle	10, 771	10, 111
Sheep	793	610
Swine	1, 467	1, 012
Poultry	45, 091	37, 140

BEES

	1917 Number	1918 Number
Number of colonies	273	252

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	1,657	1,273	33,094 bu.
Oats	1,512	1,052	22,984 bu.
Barley	4	27	35 bu.
Buckwheat	196	261	2,040 bu.
Wheat (winter)	42	29	305 bu.
Wheat (spring)	24	15	136 bu.
Rye	290	179	1,277 bu.
Hay and forage:			
Alfalfa	123	116	207 tons
Other hay	15,330	14,382	15,937 tons
Corn (ensilage)	1,728	1,622	14,289 tons
Corn (fodder)	....	279	......
Special crops:			
Field beans	41	59	357 bu.
Cabbage	39	26	445 tons
Potatoes	832	673	57,739 bu.
Roots raised for stock food	....	19	......
Canning factory crops	36	....	......
Other vegetables and garden crops	184	172	......
Fruits:			
Apples	1,550	1,413	59,856 bu.
Peaches	148	74	2,971 bu.
Pears	39	27	1,182 bu.
Plums	9	3	500 lbs.
Cherries	11	8	3,785 lbs.
Quinces	....	3	6 bu.
Vineyard	5	2	560 lbs.
Small fruits	36	37	......

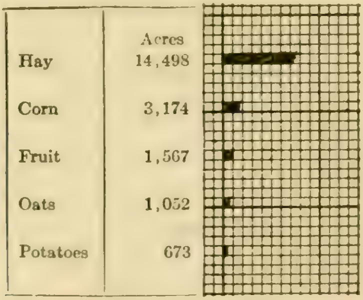


FIG. 127.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN PUTNAM COUNTY

QUEENS COUNTY

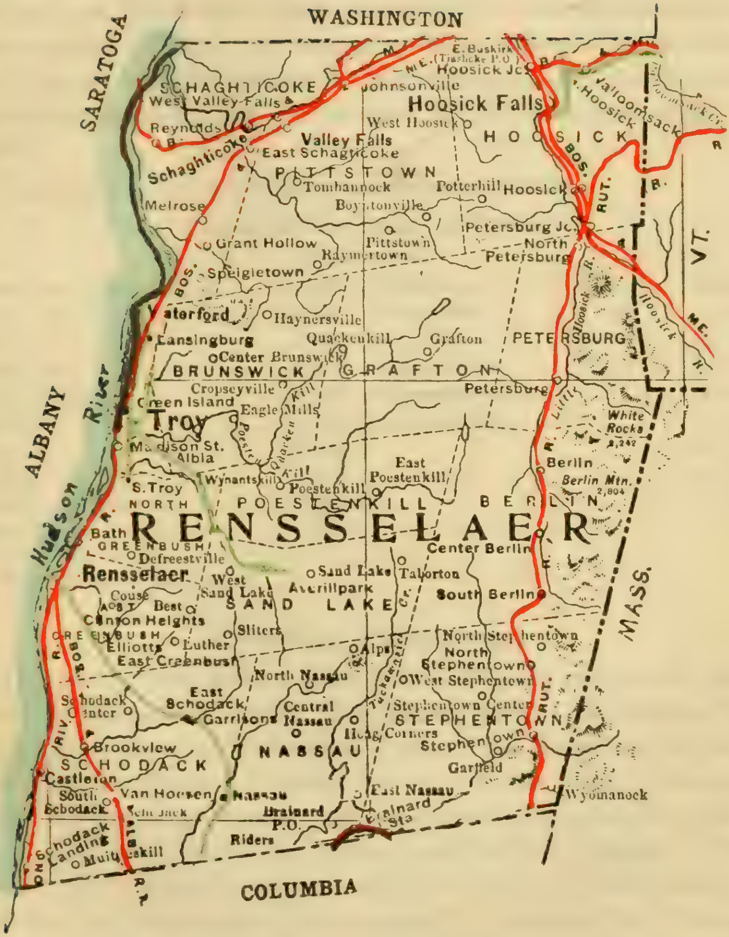
Queens County lies in the western part of Long Island and was one of the first counties of the state, being formed in 1683. At that time Kings was named in honor of Charles II, and Queens in honor of his wife Katherine.

When first visited by Europeans, Queens County was well wooded, and in selling land to the early settlers the Indians at Jamaica stipulated that the whites should not cut down trees "wherein eagles do make their nests." As in other sections, however, the progress of civilization has seen the gradual destruction of forests. Timber was needed for building and manufacturing purposes, and immense quantities of wood were sent to New York, where it was the chief fuel until the introduction of anthracite coal at about 1825. The destruction of the native growth of timber gave rise to the nursery business, which has grown to remarkable dimensions. Among the large growers of ornamental trees are the Bloodgood Nurseries at Flushing and those of the Cottage Garden Company.

More than two centuries ago Queens County was famous throughout the colonies and even in England for its race courses at New Market and Beaver Pond.

In the early part of the eighteenth century the northwestern part of this county, then the township of Newtown, contained excellent orchards of apples, pears, and peaches. The well-known Newtown Pippin was one of the important products. Wheat was the favorite crop, but enough rye, barley, corn, hemp, flax, and tobacco were raised for home consumption, besides a variety of fruits and vegetables. Much land was given over to grazing, for the farmers also raised a considerable number of horses, cattle, and sheep from breeds originally brought from England and Holland.

The growth of New York and Brooklyn led to frequent changes in agricultural methods and products. About fifty years ago this county was the scene of a large market garden industry. As the city of New York extended its boundaries the growers were obliged to move further out, leaving behind them their rich garden soils, which with their system of fertilizing had been built up sometimes as much as two feet above the original level. At the present time in the vicinity of Jamaica there are gardens making a specialty of forcing the production of vegetables out of their usual season. Experiments which led to this business were begun about sixty years ago with the production of rhubarb. Cauliflower came next, and now it is possible to secure many other vegetables fresh throughout the entire year.


WASHINGTON
SARATOGA
ALBANY
COLUMBIA
VT.
MASS.
Hudson River
RENSSELAER
SCHAGHTICOKE
PITTSTOWN
HOOSICK
PETERSBURG
BRUNSWICK
GRAFTON
POESTENKILL
BERLIN
NORTH GREENBUSH
SAND LAKE
EAST GREENBUSH
SCHODACK
NASSAU
STEPHENTOWN
E. Buskirk
Hoosick Jc.
Johnsonville
Hoosick Falls
West Valley Falls
West Hoosick
Reynolds
Schaghticoke
Valley Falls
East Schaghticoke
Tomhannock
Potterhill
Hoosick
Boyntonville
Melrose
Petersburg Jc.
North Petersburg
Grant Hollow
Pittstown
Raymertown
Speigletown
Waterford
Haynersville
Lansingburg
Quackenkill
Grafton
Center Brunswick
Cropseyville
Green Island
Eagle Mills
Petersburg
Troy
Madison St.
Albia
White Rocks 2,242
Berlin
Berlin Mtn. 2,804
S. Troy
Wynantskill
Poestenkill
East Poestenkill
Bath
Defreestville
Center Berlin
Rensselaer
West Sand Lake
Sand Lake
Taborton
Averillpark
South Berlin
Couse
Best
Clinton Heights
Sliters
North Stephentown
Elliotts
Luther
Alps
North Stephentown
East Greenbush
North Nassau
West Stephentown
East Schodack
Schodack Center
Central Nassau
Garrisons
Stephentown Center
Hoag Corners
Brookview
Stephentown
Garfield
Castleton
South Schodack
Van Hoesen
Nassau
East Nassau
Brainard P.O.
Brainard Sta.
Riders
Wyomanock
Schodack Landing
Muitzeskill
Hoosick R.
Walloomsac
Little Hoosick
Poestenkill
Quackenkill
BOS. & ME.
RUT. R.
B. & A.
R.R.

MAP OF RENSSELAER COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads; brown, canals

RENSSELAER COUNTY

This county is situated about midway along the eastern border of the state, the Hudson River separating it from the counties of Saratoga and Albany. Its eastern boundary is formed by the states of Vermont and Massachusetts. The total area is 424,320 acres, extending 20 miles from east to west and 33 miles from north to south.

The population is shown in the following table:

Population by Cities and Towns

(Census of 1915)

Rensselaer (city)	11,210
Troy (city)*	75,488
Berlin	1,480
Brunswick	3,010
East Greenbush	1,559
Grafton	948
Hoosick	8,013
Nassau	2,205
North Greenbush	1.383
Petersburgh	1,238
Pittstown	2,887
Poestenkill	1,134
Sand Lake	2,140
Schaghticoke	2,711
Schodack	4,647
Stephentown	1,287
Total	121,330

---

*Troy is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Albany County and named from the Van Rensselaer family. The greater portion was included in the patent granted by Holland to Killian Van Rensselaer in 1630, and the first settlement was made by tenants under him in the same year. By this grant he was made proprietor over what is now the counties of Albany and Rensselaer, and part of Columbia. The council at Manhattan retaining exclusive control of Fort Orange and the land immediately surrounding it, neither Fort Orange itself, nor its successor, the city of Albany, was ever a part of the domain of the patroon.

Although Van Rensselaer chose his location with the judgment of an experienced trader, the colony increased and became even more prosperous than he had anticipated. The land was leased at an annual rental, payble in grain, beeves, and wampum, or a share of the products of the land. The average rate of rent demanded was ten bushels of wheat for a hundred acres.

Hendrick Hudson was undoubtedly the first white man to step foot within the present limits of Rensselaer County, even before he sailed up to Albany. At that time this section was occupied by a tribe of friendly Indians, the Mohicans, or Mohegans, since made famous by the writings of James Fenimore Cooper. Two years before the founding of Rensselaerwyck, the Mohicans were driven by the Mohawks into the Connecticut valley, and for many years the territory now comprising the city of Troy probably remained part of the hunting ground of the Mohawk Indians. In 1720, a grant of 490 acres, comprehending the original allotments on which the city was erected, was made by the proprietor of the manor of Rensselaerwyck to Derrick Vanderheyden, at the small rent of 3¾ bushels of wheat and four fat fowls annually. After the Revolution, emigrants from New England, seeing the advantageous situation of Vanderheyden, as Troy was then called, induced the owners to lay it out into town lots. The completion of the Erie Canal gave an impulse to enterprise that developed the village into an important city.

The northern border of the county suffered repeated ravages by the enemy during the French wars, and many settlements were broken up.

In the lower part of the city of Rensselaer stands Fort Cralo, where the well-known song of Yankee Doodle was written by Dr. Shackburg, a surgeon in the British army, during the last of the French and Indian wars. It was intended as a satire on the Continental regiments, whose general appearance greatly amused the well-drilled and well-uniformed British soldiers.

Within the limits of the town of Hoosick the battle of Bennington was fought, August 16, 1777, the result of which contributed more than did any other event to the final surrender of Burgoyne at Saratoga. A portion of the battlefield is now the property of the state.

In the long struggle between landlords and tenants, known as the "anti-rent war," many exciting events occurred in the county.

DEVELOPMENT OF INDUSTRY

The early colonists gave their attention largely to wheat and corn growing and stock raising.

Before the arrival of the Dutch a portion of the county was devoted to the raising of corn by the Indians, and as late as 1780 there were patches or strips within the present limits of Troy that were known as the "corn grounds of the Indians." Considerable wood, tan bark, and charcoal were shipped from the towns of Grafton and Sand Lake to Troy about the middle of the nineteenth century. Quantities of hay were also shipped to Troy from the town of Brunswick. Liberal crops of corn, oats, wheat, and potatoes were produced in the valleys and on a large part of the uplands.

Flax was an important crop. As late as 1879 the flax production of the county was 324,642 pounds of fiber and 9,974 bushels of seed. The soil, however, especially in the eastern part, is best adapted to dairying and grazing, and during the next thirty years more attention was given to those industries. In 1910 the production of flax had decreased to 400 bushels of seed for the entire state.

Lansingburg and Troy have been engaged in manufacturing from an early date. The surrounding farm sections soon found dairying and market gardening profitable, and those occupations are still extensively followed.

General agriculture is pursued throughout the county, dairying predominating, the cities of Troy, Albany, and Rensselaer forming convenient markets for the sale of milk. In the vicinity of Troy and Rensselaer truck gardening is very prominent. There is a small section in the southwestern part in which fruit raising receives considerable attention. According to the census of 1918, the county ranks first in the production of rye.

The most important manufactures of the county include iron, and collars and shirts (p. 587).

CLIMATE AND RAINFALL

Since climatological records taken within Rensselaer County are not available for a sufficient length of time, reference may be made to the records for Albany County (page 95), where general conditions are very similar.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

Two ranges of hills, connecting the Green Mountains on the north with the Catskills on the south, traverse Rensselaer County. The Taconic Mountains on the extreme east are divided from the Petersburg Mountains in the center and west by Kinderhook Creek and the Hoosick and Little Hoosick rivers. In some places the summits of the Petersburg Mountains form plateaus, the land of which is unfit for cultivation. The highest peaks are from 2,000 to 2,800 feet in height. The principal peak in the northern part is Bald Mountain, located partly in Schaghticoke and partly in Lansingburg. The highest point in the county is Berlin Mountain in the town of Berlin.

Along the banks of the Hudson River, the western boundary of the county, is a stretch of low, flat land, varying from a few rods to one-half mile in width and bounded by a series of bluffs from 100 to 200 feet in height. Numerous small lakes and ponds are interspersed in the wild and rocky region of the Petersburg Mountains. There are an abundance of mill sites, and the numerous streams irrigate every portion of the county.

The narrow flats along the streams and a large portion of the uplands are adapted to the cultivation of grain and produce excellent crops, but the soil is better adapted to grazing and dairying, especially in the eastern towns of the county.

DESCRIPTION BY TOWNSHIPS

Berlin: The surface is broken by two ranges of mountains separated by a narrow valley extending north and south, the Taconic Mountains lying on the east. Several peaks are more than 2,000 feet high, Berlin Mountain rising to a height of 2,804 feet. The principal streams are Kinderhook Creek and Little Hoosick River. The western part of the town is covered with forests in which are a number of lakes. The soil in the valley is a gravelly loam, but among the mountains it is a hard, sterile clay. At Berlin in this town is located the well-known gladiolus farm owned by Arthur Cowee.

Products: Dairy products, potatoes, corn, oats, hay, buckwheat and rye.

Average values of farm land range from $10 to $50 an acre.

BRUNSWICK: The surface is hilly in the east and northwest, where the most elevated portions rise from 800 to 1,100 feet above tide. The principal streams are the Poesten Kill and branches and Tomhannock Creek. The soil on the hills is hard and sterile; in the valley and lowlands it is a fertile, gravelly loam interspersed with clay.

Products: Rye, potatoes, oats, corn, hay and vegetables.

Average values of farm land range from $50 to $100 an acre.

EAST GREENBUSH: Bluffs rise from the bank of the Hudson to an elevation of 100 to 300 feet. From the summits of these bluffs the surface spreads out into a rolling upland, rising toward the east. The chief streams are Mill and Moordener creeks. The soil is sand, gravel, and clay and is very fertile.

Products: Rye, ensilage corn, potatoes, oats, hay, small fruits and garden truck.

Average values of farm land range from $50 to $100 an acre.

GRAFTON: The surface is rocky and broken, hills rising 1,200 to 1,700 feet above tide, many of them covered with forests. Several ponds lie among the hills. The Quacken Kill is the principal stream. The soil is chiefly clay, wet and underlaid by hardpan.

Products: Potatoes.

Average values of farm land range from $10 to $50 an acre.

HOOSICK: The surface is hilly, including the narrow valley of the Hoosick River and a rocky, hilly region rising on either side. A belt of dark slate, which is quarried for roofing, extends along the east bank of the river. Further east the rocks consist of slaty shale and limestone, the latter furnishing lime. The soil among the hills is hard and sterile; in the valleys it is principally clay mixed with disintegrated slate. The Walter A. Wood Farm Implement Manufacturing Company is located at Hoosick Falls.

Products: Wool, potatoes and dairy products.

Average values of farm land range from $50 to $100 an acre.

NASSAU: The surface is uneven and hilly, the central and eastern portions being rocky. The principal stream is Kinderhook Creek. Many small streams furnish abundant water power. Numerous small lakes lie among the hills, and Psanticoke Swamp, west of the center, covers several hundred acres. The soil is clay and gravel underlaid by hardpan.

Products: Rye, hay, buckwheat and dairy products.

Average values of farm land range from $20 to $75 an acre.

NORTH GREENBUSH: Clay bluffs 100 to 200 feet·high rise from the river and spread out into rolling uplands, broken by deep gulleys of the streams. The principal stream is Wynant Kill. The soil is a sandy and gravelly loam, interspersed with patches of clay.

Products: Garden vegetables, rye, fruit, and milk for Albany and Troy markets.

Average values of farm land range from $25 to $75 an acre.

PETERSBURG: The surface consists of two mountain ranges separated by the narrow valley of the Little Hoosick River. The Hoosick River breaks through the Taconic Mountains in the north-eastern part. Several peaks in the town rise from 2,000 to 2,600 feet. Bald Mountain, on the east, is 2,693 feet above tide. The mountain regions are generally unfit for cultivation, but the soil in the valley is a gravelly loam.

Products: Sheep and potatoes.

Average values of farm land range from $10 to $50 an acre.

PITTSTOWN: The surface is mountainous in the south and east, extending into a moderately hilly region in the north. The highest summits in the southeast are 800 to 1,200 feet above tide. Numerous small streams flow west and north into the Hoosick River, the largest of which is Tomhannock Creek. The soil is principally a gravelly and slaty loam.

Products: Corn, rye, potatoes and fruit.

Average values of farm land range from $25 to $100 an acre.

POESTENKILL: The surface is rugged and rocky in the center and east and the soil unproductive, except in a few localities where tillage has made it fairly productive. The western part is hilly,

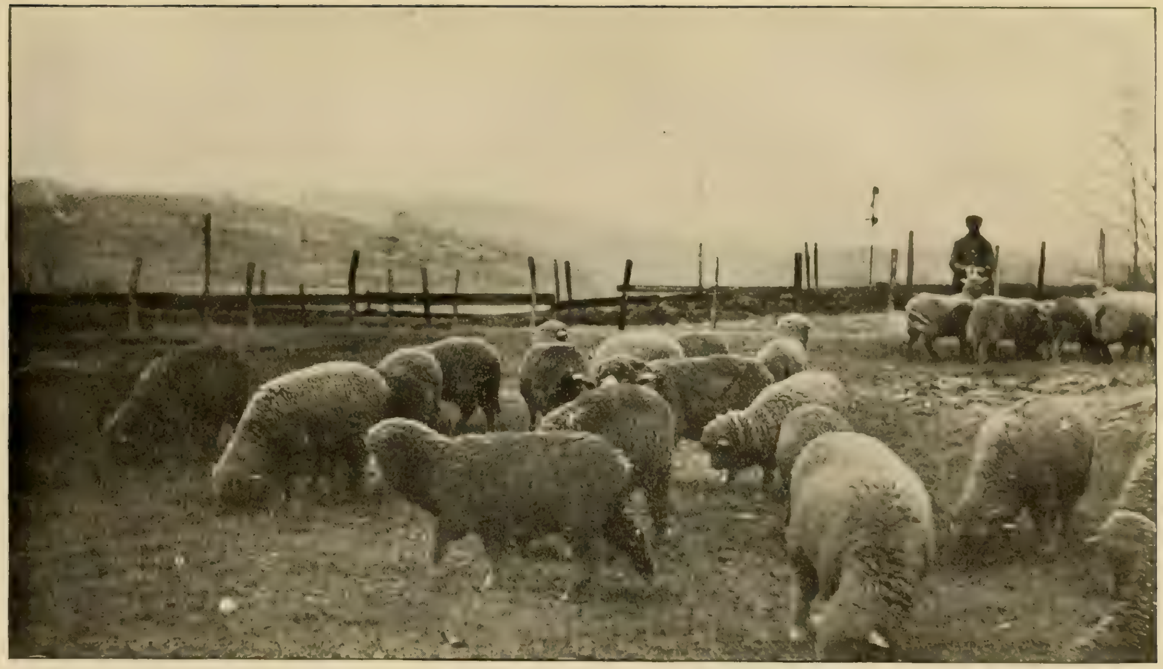


FIG. 128.—SHEEP AT PASTURE IN RENSSELAER COUNTY

with a gravelly loam soil adapted to pasturage. There are several ponds in this town. On the Poesten Kill is a fall of about 80 feet.

Products: Rye, potatoes, apples and dairy products.
Average values of farm land range from $25 to $100 an acre.

SAND LAKE: The surface is mountainous in the east and hilly in the west. The highest points rise 1,400 to 1,500 feet above tide. The eastern part is largely covered with forests. Wynant Kill and Tackawasick Creek are the principal streams. Several fine lakes lie along the valleys of the streams. The soil in the west is a good quality of gravelly loam and is quite fertile, as is also the comparatively low land in the eastern portion. Agriculture and grazing have always been prominent industries. Numerous garden farms have been established.

Products: Truck crops, dairy products, corn, hay, rye, oats, potatoes, berries and small fruits.
Average values of farm land range from $25 to $100 an acre.

SCHAGHTICOKE: The surface is principally a rolling upland about 200 feet above the river. Hills in the south rise to 600 feet. A portion of the Hoosick River is bordered by steep banks 200 feet high. The soil is generally a fertile sandy or gravelly loam. The Tomhannock Creek in the north, as well as some of the small streams, furnishes water power.

Products: Oats, rye, corn, potatoes and hay.
Average values of farm land range from $25 to $100 an acre.

SCHODACK: The surface rises from the Hudson River in a series of bluffs 200 feet high, from the summits of which it spreads out into an undulating upland. The soil in the east is clay; in the west it is a fertile sandy and gravelly loam.

Products: Hay, rye, oats, potatoes, pears, apples and dairy products.
Average values of farm land range from $50 to $150 an acre.

STEPHENTOWN: The surface consists of two rocky mountain ranges, separated by the valley of Kinderhook Creek. The highest summits in the east are 2,200 to 2,600 feet above tide. A considerable part of the town is covered with forests. The soil is hard and sterile among the mountains and a gravelly loam in the valleys.

Products: Potatoes and dairy products.

Average values of farm land range from $10 to $75 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Hudson River Railroad extends along the western border as far as Troy. Several branches of the Boston and Maine extend through the northern section of the county, one running from Troy to Eagle Bridge in Washington County, where it connects with the Delaware and Hudson. From this point two lines extend to Hoosick Falls, where it sends another branch to Bennington, Vermont, the two lines mentioned continuing to Petersburg Junction. Here it connects with the Rutland, turning from this point easterly to Boston. Another branch extends from Eagle Bridge to Mechanicville in Saratoga County, connecting at Johnsonville with the Greenwich and Johnsonville Railroad.

The Boston and Albany extends from Rensselaer to Albany and south into Columbia County, where it connects with the Rutland and New York Central.

The Rutland Railroad extends through the eastern part of the county, touching at Brainard on the southern border.

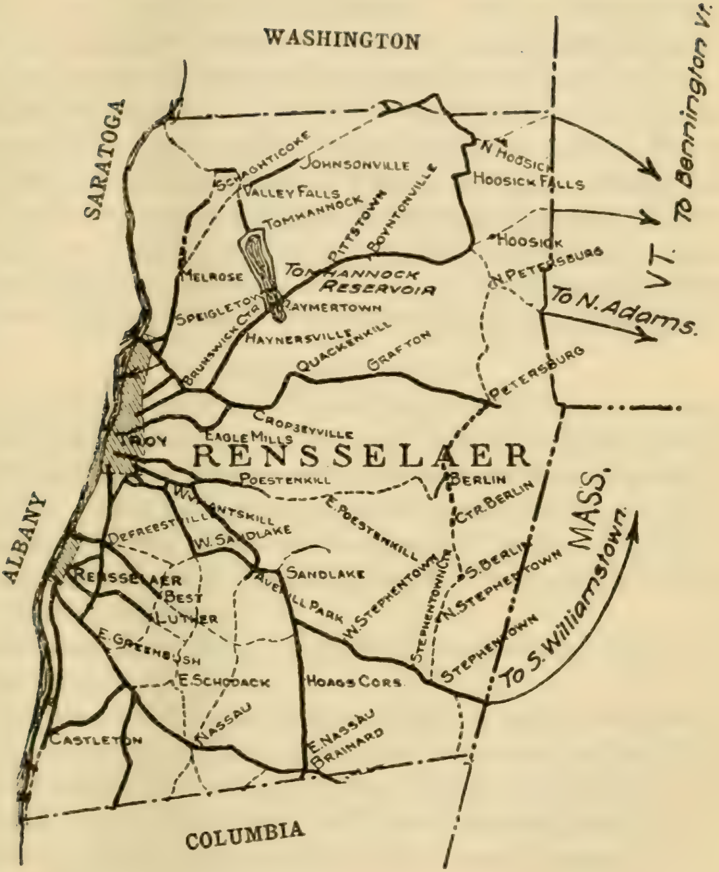
Electric Roads

The Albany Southern Electric Road between Albany and Hudson extends through the southwestern part of the county, affording not only passenger service, but service for freight and milk.

An electric road extends from Troy to Averill Park. Another in the northeast corner, the Berkshire Street Railway, extends from Hoosick Falls into Vermont.

Waterways

Rensselaer County lies at the head of navigation and tidewater of the Hudson. This, with the facilities furnished by the Erie and Champlain canals, affords excellent advantages in transportation.


WASHINGTON
SARATOGA
ALBANY
COLUMBIA
RENSSELAER
VT.
MASS.
To Bennington Vt.
To N. Adams.
To S. Williamstown
N. Hoosick
Hoosick Falls
Hoosick
N. Petersburg
Petersburg
Schaghticoke
Johnsonville
Valley Falls
Tomhannock
Pittstown
Boyntonville
Tomhannock Reservoir
Melrose
Speigletown
Brunswick Ctr.
Raymertown
Haynersville
Quackenkill
Grafton
Cropseyville
Eagle Mills
Troy
Poestenkill
E. Poestenkill
Berlin
Ctr. Berlin
S. Berlin
Wynantskill
Defreestville
W. Sandlake
Sandlake
Averill Park
W. Stephentown
Stephentown Ctr.
N. Stephentown
Stephentown
Rensselaer
Best
Luther
E. Greenbush
E. Schodack
Hoags Cors.
Nassau
E. Nassau
Brainard
Castleton

State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Improved Highways

From Troy an improved highway runs down the west side of the county, extending to New York City. Among the improved roads leading from Troy are the following: north to Schaghticoke; northeast and north through Washington County; east to Petersburg; and southeast through Wynantskill, West Sand Lake, Sand Lake, and Stephentown. The latter road branches to the south and connects with a road leading from Rensselaer through Nassau and Brainard and continuing to Pittsfield and Lenox. Short roads lead from Rensselaer in different directions, among them being one extending to Castleton and connecting with the highway running to New York City. There are in the county 180 miles of completed improved highway with 10 miles additional under construction.

AVAILABLE MARKETS.

Troy and Rensselaer are the principal markets within the county.

Troy has extensive manufactories of iron of excellent quality, and is known as the greatest collar-and-shirt manufacturing city in the world. Other manufactured articles include knit goods, paper boxes, and brushes. This city is the seat of the Rensselaer Polytechnic Institute, which has the reputation of being one of the best of its kind in America.

Rensselaer has railroad shops and manufactures felt, dyes, leather, oilcloth, and shirts.

A large part of the milk produced is sold as market milk, which is collected by the milk companies and sent either to New York or to Albany, Troy, and other cities in the capital district. In the latter cities quantities of milk are delivered direct by the producer. Some American cheese and a small amount of condensed milk is manufactured.

The agricultural organizations are as follows:

Agricultural and Liberal Arts Society of Rensselaer County.
Capitol District National Farm Loan Association.
Collar City National Farm Loan Association.
Cooperative Farmers' Company.
First National Farm Loan Association of Nassau.
Granges: Pomona and eight subordinate granges.
Poestenkill Cooperative Association, Inc.
Rensselaer County Agricultural and Horticultural Society.
Rensselaer County Breeders' Association.
Rensselaer County Dairymen's League.

Rensselaer County Farm Bureau Association.
Troy Market Gardeners' Cooperative Association, Inc.
Washington and Rensselaer Sheep Breeders' and Wool Growers' Association.

EDUCATIONAL FACILITIES

At Troy is located the Emma Willard School, the Russell Sage College, and the Rensselaer Polytechnic Institute.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Berlin, Castleton, Hoosick Falls, Lansingburg, Nassau, Rensselaer, Schaghticoke, Troy, and Valley Falls.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	365,542
Number of farms	3,654
Per cent of farm land improved	67.2

LIVE STOCK PRODUCTS

Milk sold	5,039,085 gal.
Cream sold	57,016 gal.
Butter fat sold	744,903 lbs.
Butter produced	454,152 lbs.
Cheese produced	30,916 lbs.
Eggs produced	1,091,087 doz.
Wool produced	18,233 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	9,666
Cattle	29,594
Sheep	25,190
Swine	12,081
Poultry	184,489

BEES

Number of colonies	2,220

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	13,265	409,503
Oats	18,456	516,979
Wheat	53	1,314
Barley	109	3,543
Buckwheat	3,938	81,974
Rye	13,453	213,343

	Acres	Tons
Hay and forage	94,741	96,129

Special crops:	Acres	Yield
Potatoes	10,008	1,142,796 bu.
Vegetables, other than potatoes	2,102	....
Dry edible beans	56	937 bu.
Dry peas	2	30 bu.

Fruits:		
Apples	159,554 trees	306,738 bu.
Peaches and nectarines	13,353 trees	1,387 bu.
Pears	28,049 trees	28,727 bu.
Plums and prunes	13,935 trees	5,163 bu.
Cherries	9,528 trees	3,681 bu.
Quinces	297 trees	70 bu.
Grapes	10,468 vines	137,315 lbs.
Small fruits	348 acres	715,791 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,274	2,565

LIVE STOCK AND POULTRY

Horses and mules	6,663	6,218
Cattle	23,748	22,242
Sheep	13,371	11,836
Swine	6,473	5,962
Poultry	171,979	136,924

BEES

Number of colonies	2,041	2,086

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	9,336	9,070	137,024
Oats	15,505	14,692	356,411
Barley	192	198	3,264
Buckwheat	3,951	4,753	59,906
Wheat (winter)	197	129	1,593
Wheat (spring)	170	356	3,348
Rye	13,689	11,858	243,387

	1917	1918	
Hay and forage:	Acres	Acres	Yield
Alfalfa	415	288	612 tons
Other hay	62,855	60,307	70,350 tons
Corn (ensilage)	4,285	3,323	26,804 tons
Corn (fodder)	....	1,119	....
Special crops:			
Field beans	1,041	1,389	8,690 bu.
Cabbage	372	269	1,864 tons
Potatoes	6,044	6,541	530,351 bu.
Roots raised for stock food	....	392	....
Canning factory crops	....	38	....
Other vegetable and garden crops	984	1,206	....
Fruits:			
Apples	4,659	6,156	144,928 bu.
Peaches	85	102	1,214 bu.
Pears	399	523	27,395 bu.
Plums	118	153	8,230 lbs.
Cherries	122	78	9,199 lbs.
Quinces	....	1	117 bu.
Vineyard	136	22	220 lbs.
Small fruits	466	582	....

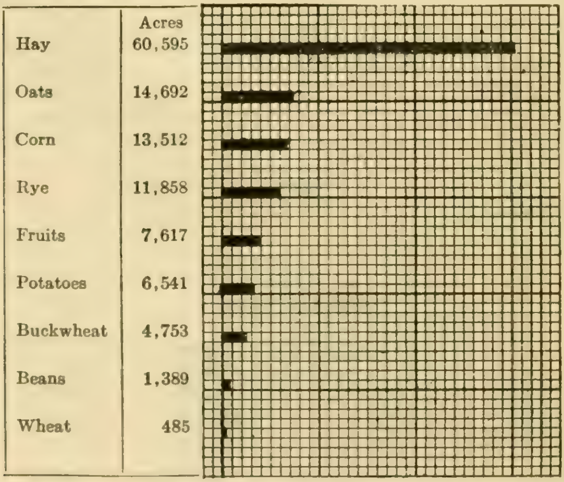


FIG. 129. CHART SHOWING RELATIVE ACREAGE OF CROPS IN RENSSELAER COUNTY

RICHMOND COUNTY

This county, which includes Staten Island and small islands in its vicinity, is located in the southeastern part of the state. It was an original county, organized in 1683, and at the present time forms a portion of the city of New York. The name is derived from that of a son of Charles II.

Staten Island was visited by Henry Hudson in his voyage of discovery in 1609. In 1630 it was purchased from the Indians by Michael Pauw, one of the four patroons of New Netherlands, but it soon reverted to the West India Company. Beginning with the conveyance of New Jersey to Berkeley and Carteret in 1665, doubt as to the ownership of the island existed between the colonies of New York and New Jersey. The claim of New York was not settled for nearly a century and a half.

Near the close of the seventeenth century a considerable number of French Huguenots settled on Staten Island. When hostilities broke out between the whites and the Indians at about 1640, many of the white settlements were laid waste. The island was transferred to Governor Lovelace in 1670, and was then abandoned by the Indians. During the Revolution, July 4, 1776, British troops occupied the island, and held it until their final removal from the state in 1783.

Although during the first century and a half following the settlement of Staten Island agriculture remained the principal pursuit, the fisheries about the shore assumed considerable importance. Shipbuilding also received a large share of attention for some time.

Along the southern and western shores conditions are especially favorable for oysters, although on account of the increasing demand it is now necessary to supplement the natural beds by artificial means.

ROCKLAND COUNTY

This county is situated in the southeastern part of the state, the Hudson River lying on the east and New Jersey on the south. It has an area of 117,120 acres. From north to south it extends approximately 20 miles and from east to west 17 miles. The population is shown in the following table.

Population by Towns

(Census of 1915)

Clarkstown*	7,931	Stony Point	3,721
Haverstraw	9,266		
Orangetown	13,601	Total	46,903
Ramapo	12,384		

---

*New City, in the town of Clarkstown, is the county seat.

HISTORICAL ASSOCIATIONS

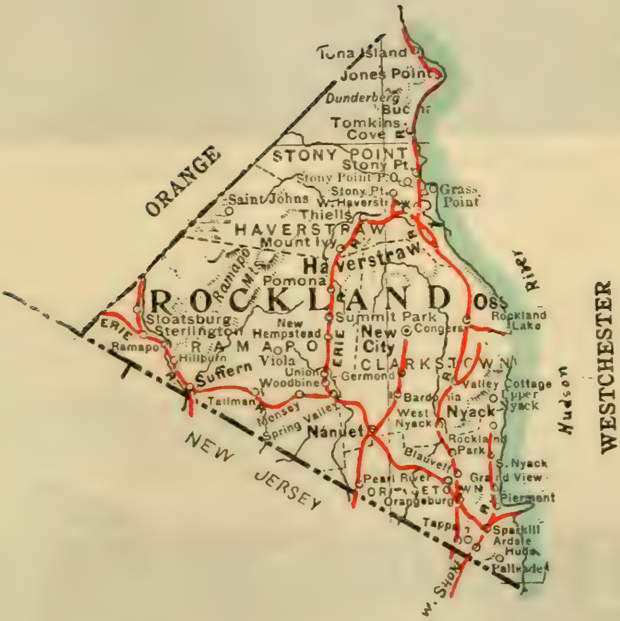
Rockland County was taken from Orange County in 1798 and is said to have included all that part of Orange already settled when the county was erected except the part that fell to New Jersey on the settlement of the boundary. Like Orange County, its first settlers were Dutch, and the first settlements were probably made as early as 1680.

A great number of stirring incidents are connected with the early history of the town of Stony Point. The promontory of Stony Point was fortified during the Revolution and was captured by the British. The Americans under General Wayne recaptured it in one of the most daring and brilliant exploits of the war. In this town is the house where Arnold and Andre met while plotting for the delivery of West Point to the British. Andre's subsequent trial and execution took place in the southern part of the county.

Some sixty years ago large sums of money were spent in the endeavor to raise the wreck of "one of Kidd's vessels" which was believed to be sunk near Caldwell's Landing, filled with treasure.

DEVELOPMENT OF INDUSTRY

General farming has given way almost entirely to truck, fruit, dairy, and poultry farming. All the milk produced in the county, most of the truck crops, and much of the fruit and poultry


ORANGE
Tuna Island
Jones Point
Dunderberg
Tomkins Cove
STONY POINT
Stony Pt.
Stony Point P.O.
Stony Pt.
W. Haverstraw
Grassy Point
Saint Johns
Thiells
HAVERSTRAW
Mount Ivy
Haverstraw
Ramapo Mts.
Pomona
ROCKLAND
Summit Park
Rockland Lake
New City
Congers
Sloatsburg
Sterlington
Ramapo
New Hempstead
RAMAPO
Viola
ERIE
CLARKSTOWN
Hillburn
Suffern
Union
Woodbine
Germonds
Valley Cottage
Upper Nyack
Tallman
Monsey
Spring Valley
Nanuet
Bardonia
West Nyack
Nyack
Rockland Park
Blauvelt
S. Nyack
Grand View
Pearl River
ORANGETOWN
Orangeburg
Piermont
Tappan
Sparkill
Ardsley
Hudson
Palisades
W. SHORE
NEW JERSEY
Hudson River
WESTCHESTER

Map of Rockland County, Showing Townships
Red lines indicate railroads

Fig. 130.— Pickle Field, Monsey, Rockland County

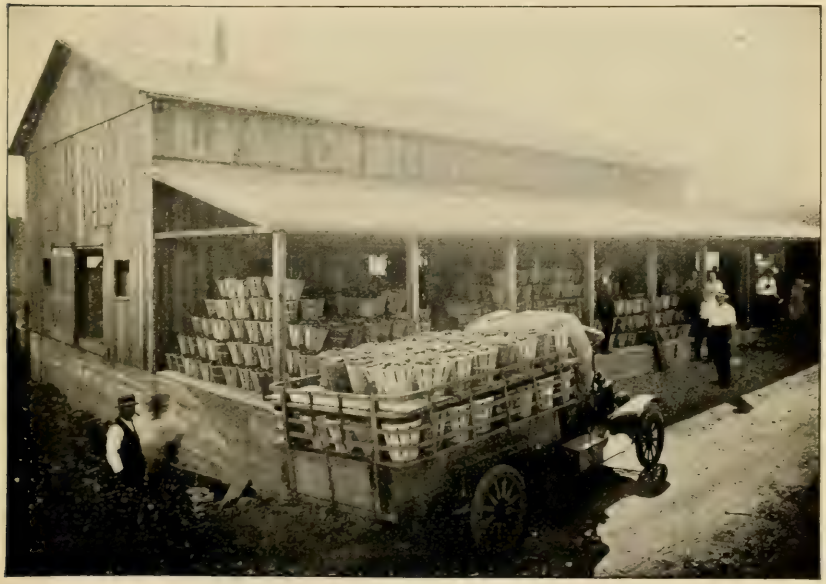


Fig. 131.— Canning Factory of Kakiat Food Products Co., Monsey, Rockland County

products are consumed within the county. New York City and Paterson, New Jersey, absorb the surplus at high prices. Within the past few years many city people have bought farms in the county because of its desirable location. On account of its proximity to New York, farm land is high and is constantly rising in value. Prices of all farm products are generally considerably higher in Rockland County than in counties farther to the north.

Quarrying is of considerable importance; and, when the first Capitol building at Albany was constructed, Rockland County furnished building stone for the purpose. One of the largest quarries is that of the Tompkins Cove Stone Company in the town of Stony Point. There are trap rock quarries at Mount Ivy in the town of Haverstraw, and at Congers and Rockland Lake in the town of Clarkstown.

CLIMATE AND RAINFALL

Climatological data for Rockland County not having been compiled, reference may be made to the records for Westchester County (page 789).

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The Ramapo Mountains, which extend along the northwest border, are the connecting link between the Blue Ridge Mountains in eastern Pennsylvania and New Jersey and the Matteawan Mountains of Putnam County. They are separated into numerous distinct spurs, ridges, and peaks, and occupy more than one-third of the entire surface of the county. They are generally steep, rocky, and barren, and the valleys between them are narrow, rocky ravines. A broken ridge known as the Nyack Hills extends along the Hudson. The surface of the central and southwestern portions of the county lying between these ranges is rolling or moderately hilly. The highest summits in the northwestern part are 1,000 to 1,200 feet above tide. The principal streams are Hackensack and Ramapo rivers. The hills along the Hudson are composed of red sandstone and the central and western portions of the county are underlaid by limestone.

DESCRIPTION BY TOWNSHIPS

CLARKSTOWN: The surface is rolling or moderately hilly except along the northern line and in the southeast corner, where the hills rise to a considerable height. Hackensack River flows south through the center and a narrow swamp extends along the greater part of its course. Rockland Lake, which lies about one mile back from the Hudson, is a sheet of water three miles in circumference and 160 feet above the river. The soil is a reddish sandy loam underlaid by clay.

Products: Milk, poultry products and vegetables.

Average values of farm land range from $100 to $300 an acre.

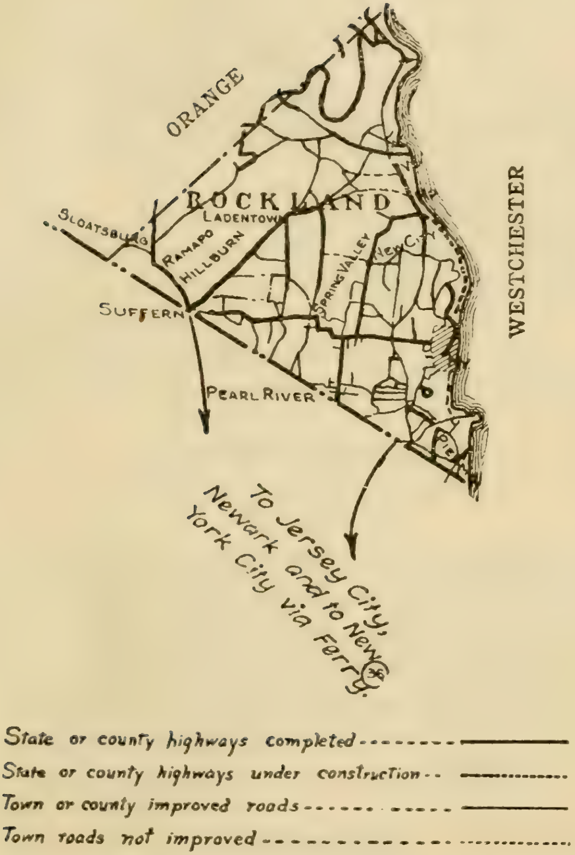
HAVERSTRAW: The surface is generally hilly and mountainous. The valleys separating the mountains are mostly narrow, rocky ravines. The principal streams are creeks flowing into the Hudson and Stony Brook, a tributary of Ramapo River. The soil is a sandy loam underlaid by clay. There is but little agricultural activity in this town.

Average values of farm land range from $50 to $150 an acre.

ORANGETOWN: The surface is broken by abrupt and rocky hills in the east, but in the center and west it spreads out into a rolling or moderately hilly region. The Nyack Hills extending along the river are 500 to 680 feet high, with steep, rocky declivities on the east and more gradual slopes on the west. Snake Hill, in the northeast corner on the line of Clarkstown, is one of the principal peaks. The principal stream is Hackensack River, which flows south through the western part. Near the northern line are several bog or peat meadows which are generally well drained and under cultivation. The red sandstone, which crops out on the east slopes within a few rods of the river between Piermont and Nyack, is quarried for building stone. The soil is a reddish sandy loam intermixed with clay.

Products: Milk and vegetables.

Average values of farm land range from $100 to $300 an acre.


ORANGE
ROCKLAND
WESTCHESTER
SLOATSBURG
LADENTOWN
RAMAPO
HILLBURN
SPRING VALLEY
NEW CITY
SUFFERN
PEARL RIVER
PIE
To Jersey City, Newark and to New York City via Ferry.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

RAMAPO: The Ramapo or Blue Mountains extend northeast and southwest through the western part. They are steep and rocky, and valleys between them are deep and narrow. Ranges of rounded arable hills extend through the southeastern part of the town and occupy the greater part of its surface. The principal stream is Ramapo River. The Ramapo Iron Works located at Hillburn is of considerable importance, as is also the Dunlop Brothers' Silk Mill at Spring Valley.

Products: Fruit and vegetables.

Average values of farm land range from $100 to $500 an acre.

STONY POINT: The surface is generally hilly and mountainous. Stony Point is a small rocky peninsula on the river. The Dunderberg is the principal mountain peak. The soil is a sandy loam underlaid by clay.

Products: Milk and vegetables.

Average values of farm land range from $75 to $200 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Several branches of the Erie Railroad serve Rockland County. One line extending through the western part terminates at Newburgh. Three shorter lines terminate respectively at Haverstraw, New City, and Nyack. From Ramapo on the line first mentioned extends the Sterling Mountain Railroad northwest into Orange County. The West Shore line of the New York Central extends the full length of the eastern side of the county.

Improved Highways

Nearly every section is reached by improved highways.

There are within the county 66 miles of completed improved highways.

AVAILABLE MARKETS

New York City and Paterson, N. J., receive such products as are not required for home consumption. Poultry products are extensively marketed in New York, both to hotels and private trade.

The agricultural organizations are as follows:

First Orange County National Farm Loan Association.
Granges: Two subordinate granges.
Rockland County Agricultural and Horticultural Association.
Rockland County Farm Bureau Association.
Rockland County Industrial Association.
Rockland County Poultry Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Congers, Haverstraw, Nyack, Pearl River, Spring Valley, Stony Point, Suffern, Piermont, and Tompkins Cove.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	52,117
Number of farms	1,133
Per cent of farm land improved	56.4

LIVE STOCK PRODUCTS

Milk sold	621,270 gal.
Cream sold	863 gal.
Butter fat sold	21,057 lbs.
Butter produced	58,907 lbs.
Cheese produced	2,620 lbs.
Eggs produced	417,840 doz.
Wool produced	180 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	2,040
Cattle	3,612
Sheep	421
Swine	1,200
Poultry	71,792

BEES

Number of colonies	443

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	2,242	81,576
Oats	694	17,680
Wheat	91	1,288
Barley	12	168
Buckwheat	161	2,405
Rye	852	13,826

	Acres	Yield
Hay and forage	10,245	11,224 tons
Special crops:		
Potatoes	958	66,909 bu.
Vegetables, other than potatoes	623	....
Dry edible beans	20	205 bu.
Dry peas	10	150 bu.
Fruits:		
Apples	58,390 trees	116,235 bu.
Peaches and nectarines	21,081 trees	7,034 bu.
Pears	11,166 trees	8,661 bu.
Plums and prunes	3,931 trees	1,438 bu.
Cherries	3,398 trees	1,596 bu.
Quinces	697 trees	252 bu.
Grapes	5,513 vines	67,015 lbs.
Small fruits	108 acres	165,827 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,074	851

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	1,102	836
Cattle	2,478	2,420
Sheep	223	202
Swine	1,054	1,052
Poultry	56,819	57,924

BEES

	1917	1918
Number of colonies	404	534

SELECTED CROPS

Cereals:	1917 Acres	1918 Acres	1918 Bushels
Corn	1,769	1,865	34,987
Oats	676	880	13,608
Barley	13	40	105
Buckwheat	140	294	2,362
Wheat (winter)	90	119	833
Wheat (spring)	26	19	285
Rye	421	523	4,767

	1917	1918	
	Acres	Acres	Yield
Hay and forage			
Alfalfa	91	98	285 tons
Other hay	4,347	5,246	6,202 tons
Corn (ensilage)	378	372	1,747 tons
Corn (fodder)	....	300	....
Special crops:			
Field beans	23	124	730 bu.
Cabbage	125	323	3,500 tons
Potatoes	639	954	29,679 bu.
Roots raised for stock food	....	143	....
Canning factory crops	14	27	....
Other vegetable and garden crops	493	476	....
Fruits:			
Apples	1,752	1,835	53,955 bu.
Peaches	819	848	15,928 bu.
Pears	222	228	3,134 bu.
Plums	61	92	786 lbs.
Cherries	54	70	19,271 lbs.
Quinces	....	50	556 bu.
Vineyard	24	....	....
Small fruits	214	338	....

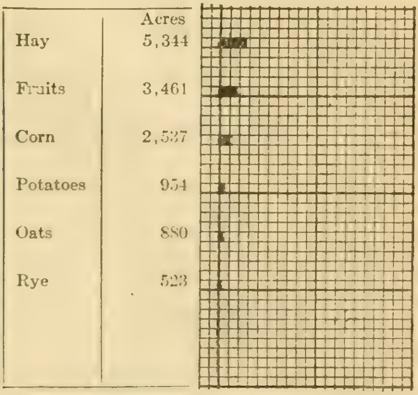
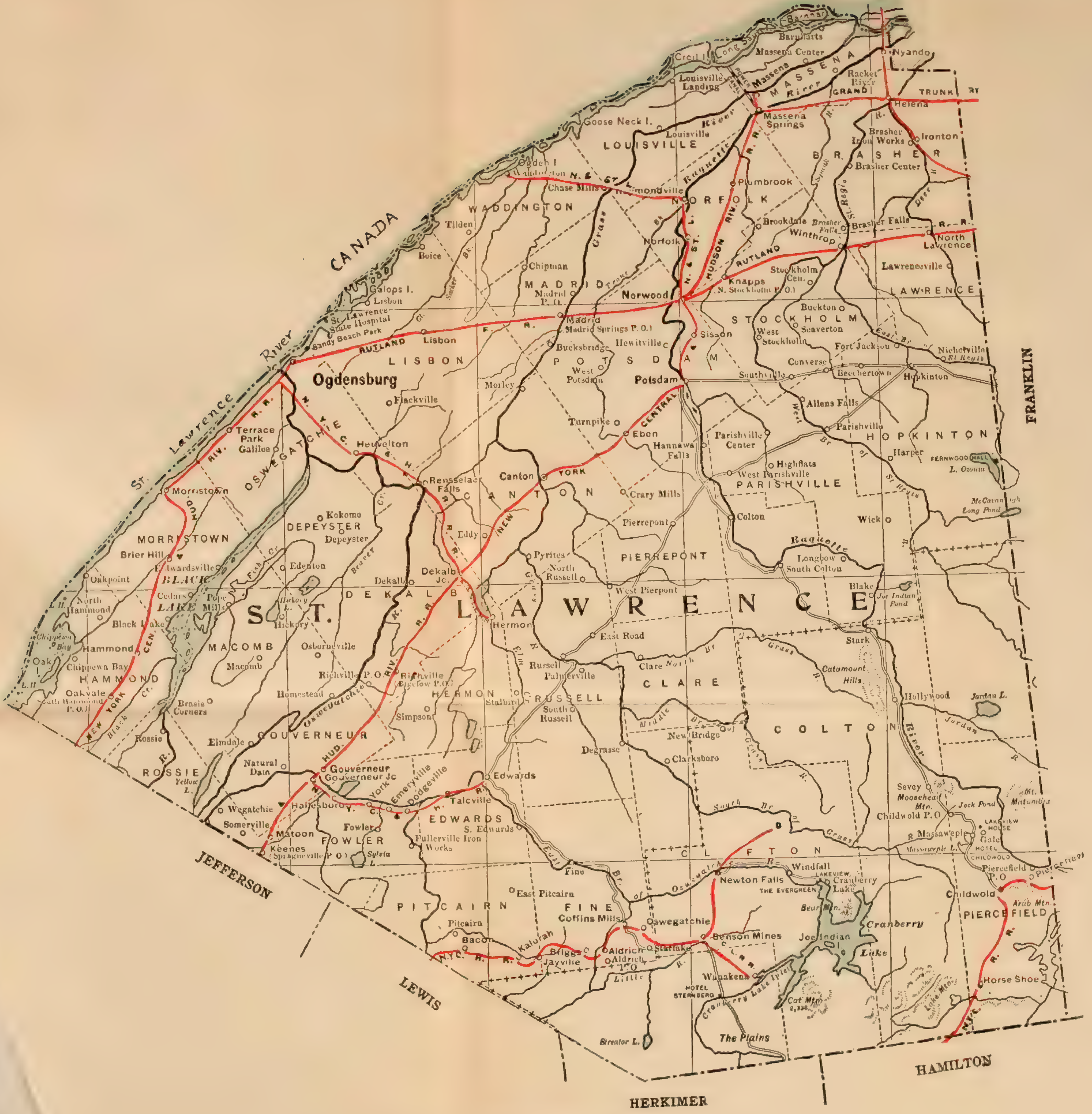


FIG. 132.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN ROCKLAND COUNTY


CANADA
St. Lawrence River
ST. LAWRENCE
FRANKLIN
JEFFERSON
LEWIS
HERKIMER
HAMILTON
MASSENA
LOUISVILLE
BRASHER
NORFOLK
WADDINGTON
MADRID
LAWRENCE
STOCKHOLM
POTSDAM
LISBON
HOPKINTON
OSWEGATCHIE
CANTON
PARISHVILLE
MORRISTOWN
DEPEYSTER
PIERREPONT
DEKALB
MACOMB
HAMMOND
HERMON
RUSSELL
CLARE
COLTON
GOUVERNEUR
ROSSIE
EDWARDS
FOWLER
CLIFTON
PITCAIRN
FINE
PIERCEFIELD
Ogdensburg
Potsdam
Canton
Norwood
Gouverneur
Massena
Massena Springs
Massena Center
Barnharts
Nyando
Helena
Racket River
Ironton
Brasher Iron Works
Brasher Center
Brasher Falls
Winthrop
North Lawrence
Lawrenceville
Louisville
Louisville Landing
Goose Neck I.
Croil I.
Long Sault
Barnhart
Ogden I.
Waddington
Chase Mills
Raymondville
Plumbrook
Brookdale
Norfolk
Tilden
Boice
Chipman
Madrid P. O.
Madrid
Madrid Springs P. O.
Stockholm Cen.
Knapps (N. Stockholm P. O.)
Buckton
Sissons
West Stockholm
Skeaverton
Fort Jackson
Nicholville
St. Regis
Converse
Southville
Beechertown
Hopkinton
Allens Falls
Parishville
Harper
Fernwood Hall
L. Ozonia
Galops I.
Lisbon
St. Lawrence State Hospital
Sandy Beach Park
Hewitville
Bucksbridge
West Potsdam
Morley
Flackville
Turnpike
Eben
Hannawa Falls
Parishville Center
Highflats
West Parishville
Terrace Park
Galilee
Heuvelton
Rensselaer Falls
Crary Mills
Morristown
Kokomo
Depeyster
Eddy
Pierrepont
Colton
Wick
McCavanagh Long Pond
Brier Hill
Edwardsville
Black Lake
Oakpoint
North Hammond
Cedars
Pope Mills
Edenton
Hickory L.
Hickory
Dekalb
Dekalb Jc.
Pyrites
North Russell
West Pierrepont
Longbow
South Colton
Blake
Joe Indian Pond
Stark
East Road
Catamount Hills
Hammond
Chippewa Bay
Oak
Oakvale
South Hammond P. O.
Macomb
Osbourneville
Richville P. O.
Richville (Bigelow P. O.)
Homestead
Simpson
Stalbird
Russell
Palmerville
Clare
South Russell
Hollywood
Jordan L.
Brasie Corners
Rossie
Elmdale
Natural Dam
Yellow L.
Wegatchie
Somerville
Hailesboro
Gouverneur Jc.
Emeryville
Dodgeville
Talcville
Edwards
S. Edwards
Fowler
Fullerville Iron Works
Matoon
Keenes (Spragueville P. O.)
Sylvia L.
Degrasse
New Bridge
Clarksboro
Sevey
Moosehead Mtn.
Childwold P. O.
Jack Pond
Mt. Matumbla
Lakeview House
Massawepie
Gale
Massawepie L.
Hotel Childwold
Piercefield P. O.
Childwold
Arab Mtn.
Fine
Windfall
Newton Falls
Lakeview
The Evergreen
Cranberry Lake
Bear Mtn.
East Pitcairn
Coffins Mills
Oswegatchie
Benson Mines
Joe Indian I.
Pitcairn
Bacon
Kalurah
Briggs
Jayville
Aldrich
Aldrich P. O.
Star Lake
Wanakena
Hotel Sternberg
Cat Mtn. 2,336
The Plains
Streator L.
Horse Shoe
Lake Mtn.
Grass River
Raquette River
Oswegatchie River
St. Regis River
Deer River
Black Lake
Grand Trunk Ry.
Rutland R. R.
N. Y. & St. L. R. R.
N. Y. Central & Hudson River R. R.
R. W. & O.
N. Y. C. R. R.

Map of St. Lawrence County, Showing Townships
Red lines indicate railroads

ST. LAWRENCE COUNTY

This county is located in the northern part of the state, the St. Lawrence River forming the western and northern boundary and the province of Quebec also bounding it on the north. It is the largest county in the state, having an area of 1,728,640 acres. From north to south it extends approximately 62 miles and from east to west 62 miles.

The population is shown in the following table·

Population by Cities and Townships

(Census of 1915)

Ogdensburg (city)	14,338	Macomb	1,204
Brasher	2,270	Madrid	1,471
Canton*	6,777	Massena	7,090
Clare	358	Morristown	1,785
Clifton	1,423	Norfolk	2,840
Colton	1,362	Oswegatchie	2,393
De Kalb	2,795	Parishville	1,678
De Peyster	911	Piercefield	1,303
Edwards	1,307	Pierrepont	1,579
Fine	1,579	Pitcairn	755
Fowler	1,493	Potsdam	9,098
Gouverneur	6,016	Rossie	932
Hammond	1,685	Russell	1,806
Hermon	1,595	Stockholm	2,655
Hopkinton	1,511	Waddington	1,904
Lawrence	1,782		
Lisbon	3,120	Total	90,291
Louisville	1,476		

---

* Canton, in the town of Canton, is the county seat.

HISTORICAL ASSOCIATIONS

St. Lawrence County was formed from Clinton and parts of Montgomery and Herkimer, March 3, 1802. The name St. Lawrence was given by one of the early French explorers to the Gulf of St. Lawrence. The same term came to be applied to the river, and then to the county.

The first white settlement in this county was made by the French, who established an Indian mission at La Presentation, now Ogdensburg, in 1749. Ten years later an island a short distance below was taken possession of by the French and strongly fortified. It was named Fort Levi, and here the last French resistance was made against the English in 1760. During the Revolution it was the rendezvous of scalping parties of tories and Indians.

The first settlement under state authority was made at Ogdensburg in 1796 by Nathan Fort, agent of Samuel Ogden. Within the next few years the "Ten Towns" were opened for settlement, and, shortly after, the adjacent parts of the Macomb purchase. .

During the War of 1812 the frontier was often alarmed and several times invaded by the enemy. The battle of Chrysler's Field was fought on the north shore of the St. Lawrence opposite this county.

During the "Patriot War" of 1837–40 there was more excitement at Ogdensburg than at any other point on the frontier and the sympathy held by a number of St. Lawrence citizens for the Canadians led to the battle of Prescott just within the Canadian border. At the close of this war the county rapidly filled up with emigrants chiefly from Vermont and the other New England states. The first town to be organized in the county was Red Mills, near Lisbon, which was settled largely by families from Washington County.

Upon the completion of the Erie Canal the growth of the county was checked, as the more fertile lands of the West were thus opened to emigration. Fifteen years later, however, a steady improvement was begun, which was greatly encouraged by the completion of railroads in the county.

DEVELOPMENT OF INDUSTRY

The first settlers raised small patches of corn, potatoes, and turnips. In winter most of them engaged in lumbering, which, besides furnishing them with cash, cleared the land for crops, of which the most important was fall wheat. The first grist mill was established in 1798. Previous to that time flour was obtained from Montreal at great expense and trouble. To supply material for clothing they produced flax and raised sheep for the wool.

Between 1800 and 1825, when distilling was an important occupation in many localities, George Parish carried on an extensive business in the town of Parishville. Instead of the customary one or two cows, he kept for breeding purposes a herd of forty. He was also the owner and proprietor of a hotel which he supplied with butter and cheese produced in Germany. After a series of unsuccessful experiments in the manufacture of butter and cheese, he persuaded William Abrams and his wife, who were the grandparents of Assemblyman E. A. Everett of Potsdam, to undertake the management of his dairy and the manufacture of butter. This was the first instance in the county where butter was produced in quantities.

Grains were formerly raised for sale, but are now consumed in dairying, which occupies a leading place in the agriculture of the county.

The change from the production of butter to the sale of whole milk has resulted in a great lessening of the pork produced within the last twenty years. Live stock and veal are sold from all except the lumbering towns. Eggs and poultry are produced in the same towns. Turkeys, which are raised in practically every town having access to railroads, are of particular importance in the towns of Lisbon, Madrid, Oswegatchie, and De Peyster.

Lumbering was of great importance at the beginning of the nineteenth century. Forty years later, on the completion of the northern railroad, lumbering received a new impulse and an increased value was given to the immense forests covering the southern part of the county. A large section, embracing portions of the towns of Pitcairn, Russell, Fine, Clifton, Clare, Colton, and Hopkinton, is still a wilderness. This section of the county, covering approximately 900 square miles, is locally known as the "South Woods" and is a part of the great wilderness of northern New York. It is a famous locality for fishing and hunting.

Mining is of importance in some localities, notably, the Benson iron mines in the town of Clifton and the zinc mine in the town of Edwards. In the western part, principally in the towns of Fowler and Edwards, talc is extensively produced.

The Northern New York Utilities Company, which furnishes light and power for northern New York, is located in the town of Edwards.

Hay and potatoes are largely produced, but are sold outside the county only to a limited extent. In the production of hay, not including alfalfa, St. Lawrence County takes first place. Spruce, hemlock, and balsam being abundant, the pulpwood industry is very prominent, and large paper mills are located in the townships of Clifton, Norfolk, and Canton. In the latter town the DeGrasse Paper Company manufactures a large part of the paper supply for the New York "World" and the St. Louis "Post."

Large quantities of maple sugar are annually produced in the wooded sections. The census of 1918 places St. Lawrence County at the head in the number of cattle and swine, and in dairy products and the production of corn, hay, maple sirup, and sugar. The county also leads in the number of colonies of bees.

Oats are largely produced, the county ranking third in the state.

Both commercial and manufacturing interests of importance are active in the county (pp. 612, 613).

CLIMATE AND RAINFALL

Climatological records for St. Lawrence County are taken from the weather bureau station at Canton, which lies at an elevation of 414 feet.

Average dates for the last killing frost in spring and the first in fall are May 9 and October 2, respectively, giving a growing season of 146 days.

The following table shows both normal and extreme temperatures and precipitation over a period of 28 years.

RECORDS OF TEMPERATURE AND PRECIPITATION AT CANTON

	Temperature					Precipitation		
	Average	Highest maximum		Lowest minimum		Average inches	Greatest amount in 24 hours, inches	Snow, average depth in inches
		Degrees	Year	Degrees	Year			
January	16.6	60	1890	—37	1898	2.85	1.18	15.4
February	15.3	61	1900	—43	1896	2.50	2.15	16.6
March	26.7	72	1910	—26	1900	2.58	1.26	14.1
April	42.8	85	1913	1	1911	2.34	1.58	3.2
May	54.4	93	1911	21	1902*	3.38	2.36	.1
June	63.9	94	1901*	30	1897	3.42	1.58	T.
July	68.7	98	1911	34	1894	3.72	1.94	......
August	66.0	96	1916	35	1914*	3.47	2.90	......
September	58.4	91	1900	25	1897*	3.25	2.72	T.
October	46.9	83	1891	14	1895	3.04	2.27	.2
November	34.5	70	1902*	—15	1917	3.02	1.87	7.2
December	21.5	61	1911	—37	1894	2.75	1.07	14.1
Year	43.0	98	1911	—43	1896	36.64	2.90	72.5

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

As St. Lawrence County covers so vast an area it shows great variety of surface, from the heights of the Adirondacks in the southeast to the flat, open country lying near the St. Lawrence. A very peculiar feature of the topography of the county is the curious course pursued by the principal inland streams. They all rise in the highlands and flow for about half or more of their course directly toward the St. Lawrence, when they make sudden turns and flow to their union with the great river in courses almost parallel to that stream. The Raquette River in its course from Tupper Lake to Massena has a fall of 1,500 feet, furnishing a waterpower that is extensively used in the manufacture of electricity. Every twenty-four hours there is used by the Aluminum Company of America at Massena 200,000 horsepower of electricity. It is possible to produce in this county many times this amount. At Hannawa Falls in the town of Pierrepont, electric current is supplied for Ogdensburg, Potsdam, Canton, and other sections in the northern part of the county.

The middle and western portions of the county are somewhat broken by protruding masses of Potsdam sandstone. The northern and northeastern portions are generally level or slightly undulating. In the towns of De Peyster, De Kalb, Macomb, and Gouverneur, white limestone occurs in abundance. The stone is generally used for building and for the manufacture of lime. Between fifty and sixty kinds of minerals valuable in the arts or as cabinet specimens may be gathered in this county.

The soil of St. Lawrence County is considerably varied in fertility. In the river towns, with proper tillage, good crops of grass and grain are assured. Swamps and low grounds occupy considerable space in some sections, portions of which have been drained and converted into arable lands producing heavy crops of both grain and grass.

DESCRIPTION BY TOWNSHIPS

Brasher: The surface is generally level, with gentle undulations in the eastern part. St. Regis River is the principal stream. The soil in the eastern part is generally sandy; in the southeast it is light and sandy; and in the north it is a clayey loam and very productive. It is generally better adapted to grazing than to tillage. Bog iron ore is obtained abundantly in the eastern part in the regions where the sand rests upon the clay deposits.

Products: Milk, butter, cheese, hay and potatoes.

Average values of land range from $5 to $20 an acre.

Canton: The surface is level or gently undulating. The Grass and Oswegatchie rivers are the principal streams. The soil is a deep, fertile, gravelly loam, underlaid by white limestone and gneiss in the south and by Potsdam sandstone in the central and northern parts. This is one of the most productive towns, especially in butter and cheese.

Products: Milk, condensed milk, cheese and hay.

Average values of farm land range from $45 to $80 an acre.

Clare: The surface is broken and largely forest-covered, being hilly and mountainous in the southeastern part. Two branches of the Grass River flow across the town.

Products: Dairy products and potatoes.

Average values of farm land range from $10 to $50 an acre.

Clifton: The surface is broken and largely forest-covered. It is watered by the Oswegatchie and Grass rivers, which are famed

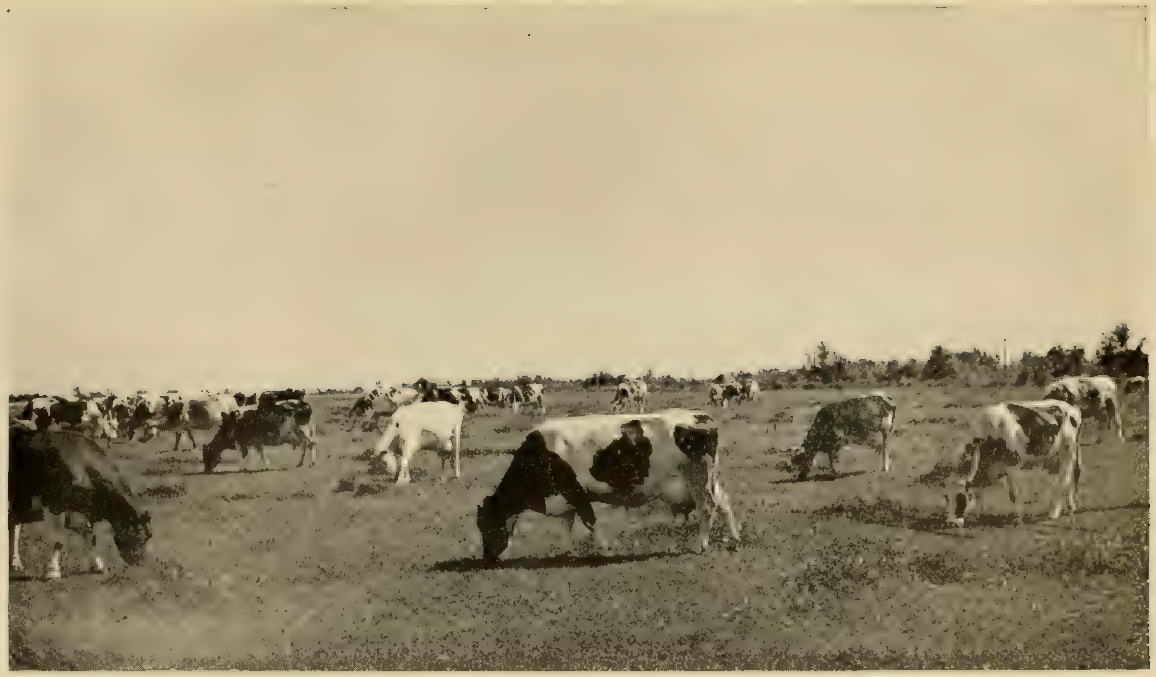


Fig. 133.— Cattle on Farm of St. Lawrence State Hospital, Ogdensburg

for trout. Cranberry Lake lies in the southern part. The soil is light and sandy. Mining and lumbering are of considerable importance and very little attention is given to agriculture.

Products: Lumber and iron.

The average value of farm land is $4 an acre.

Colton: The soil in the northern part of the town is well adapted to grazing. By far the largest portion is sandy, hilly, and rocky. It is crossed by the Raquette and Grass rivers; numerous small lakes lie throughout the central and southern parts. Two large plants for generating electricity receive their power from the Raquette River. Lumbering, which was formerly of great importance, is being superseded by dairying.

Products: Milk, butter, cheese, potatoes, hay and maple sugar.

Average values of farm land range from $10 to $20 an acre.

DeKalb: The surface, while not hilly, is broken by ridges of white limestone and gneiss, with narrow valleys between them. It is watered by the Oswegatchie River and a number of small streams. The soil is fertile and generally under good cultivation. The dairy interests of latter years are large and prosperous.

Products: Dairy products and hay.

Average values of farm land range from $30 to $75 an acre.

DePeyster: The surface is comparatively level, though sufficiently rolling to insure good drainage. It is broken in the south by parallel ridges. The northwestern part of the town, bordering on Black Lake, is an extensive marsh of about 2,000 acres. On the southeast it is also marshy. The soil along the lake is very fertile; in the central part it is light and sandy. Several large swamps in the town have been reclaimed by drainage and now produce large crops of grass. On the whole the soil produces excellent crops. It is watered by Fish Creek and a few brooks, but is generally not well watered for stock purposes, especially in the center. The ledges along the line of DeKalb and Macomb are largely white lime rock, from which a good quality of lime is manufactured for building purposes.

Products: Milk, cheese, butter, hay, oats, turkeys and pork.

Average values of farm land range from $20 to $50 an acre.

EDWARDS: The surface is principally ridges of a primitive formation, and the narrow valleys between them. It is quite broken in the northeastern part. The Oswegatchie River is the principal stream. The soil is generally light and sandy loam, very productive in the valleys. Zinc mining is of considerable importance. The town is best adapted to grazing.

Products: Milk, lumber and maple products.

The average value of farm land is $12 an acre.

FINE: The surface is elevated and broken with a soil of moderately fertile loam. It is drained by the Oswegatchie and its branches. Although much of the timber has been cut, it is largely covered with forests, the settlements being confined to the northern part. Within this town, near Star Lake, some of the work connected with the State School of Forestry at Syracuse is being conducted.

Products: Cheese, butter, maple products and lumber.

The average value of farm land is $18 an acre.

FOWLER: The surface is much broken by ridges of gneiss, with fertile loam along the streams. It is drained by the Oswegatchie River and its branches. Sylvia Lake lies south of the center of the town. In the northwest the soil is a clayey loam and in the east a light sand. This town is the center of the talc industry.

Products: Milk, cheese and hay.

Average values of farm land range from $5 to $50 an acre.

GOUVERNEUR: The surface is generally level, but somewhat broken in the north by low ridges of white limestone. These ridges furnish valuable building material. Talc of an excellent quality is mined in this town. Marble is extensively quarried for monumental purposes. The town is well watered with numerous springs and brooks and the Oswegatchie passes nearly twice across the southern part of the town. The soil is sandy in a few places, but is generally clay and loam and highly productive.

Products: Milk, cheese, butter, condensed milk and ensilage corn.

The average value of farm land is $65 an acre.

HAMMOND: The surface is generally level, but broken on the northern and southern borders by ledges of gneiss and white limestone, which are now being extensively quarried. A level terrace of sandstone extends from the north shore of Black Lake through the center of the town. The soil is a productive clay or loam. The town was formerly noted for its production of wheat as well as of other grains and grass crops, but is now principally devoted to dairying.

Products: Milk, cheese, condensed milk, hay and ensilage corn.

Average values of farm land range from $30 to $60 an acre.

HERMON: The surface is generally rolling, some parts being hilly. Elm and Carter's creeks are the principal streams. The soil is generally a sandy loam, interspersed with tracts of sand and is best adapted to grazing.

Products: Milk, condensed milk, hay and maple products.

Average values of farm land range from $10 to $40 an acre.

HOPKINTON: The surface is level in the north, but broken and hilly in the south. It is watered by branches of the St. Regis River. In the central and southern parts are several extensive lakes. In the northern part the soil is a fertile loam.

Products: Corn, grain, hay, potatoes and barley.

Average values of farm land range from $15 to $75 an acre.

LAWRENCE: The surface is level in the northern part, but somewhat rolling in the east and south. It is drained by Deer and St. Regis rivers, the latter furnishing good waterpower. The soil is a sandy loam mixed with clay. In the lower sections is a rich alluvium. It is generally well adapted to grazing and dairying, stock raising being the chief industry.

Products: Corn, grain, hay, potatoes and dairy products.

Average values of farm land range from $25 to $50 an acre.

LISBON: The surface is level or slightly undulating. It is watered by ten miles of river front and also by numerous brooks, springs and creeks. The soil is a light but fertile loam, underlaid by calciferous sandstone.

Products: Milk, hay, potatoes and wool.

Average values of farm land range from $20 to $70 an acre.

LOUISVILLE: The surface is level or gently rolling, a portion being swampy. Grass River is the principal stream. The soil is a fertile loam.

Products: Market milk, hay, corn, oats, buckwheat, barley and potatoes.

Average values of farm land range from $10 to $100 an acre.

MACOMB: The surface is much broken by ridges of gneiss, sandstone, and white limestone lying parallel with the lake and covering a large part of the town. Between these ridges are narrow intervales with rich soil. As a whole the town is much better adapted to grazing than to tillage. Fish and Beaver creeks are the principal streams. The soil is a light and sandy loam. Dairying, especially the manufacture of cheese, is largely superseding the production of grain.

Products: Milk, cheese, butter, potatoes, hay, and maple products.

Average values of farm land range from $20 to $60 an acre.

MADRID: The surface is level or moderately undulating and drained by the Grass River and by numerous brooks. There is sufficient fall at the village of Madrid to afford a fair waterpower for manufacturing purposes. The soil on the lowlands is loam, with more or less gravel or sand on the higher parts. It is generally well adapted for grazing.

Products: Milk, cheese, butter, hay, oats, potatoes and turkeys.

The average value of farm land is $35 an acre.

MASSENA: The surface is nearly level, watered by the Grass and Raquette rivers. There is a fair waterpower on both streams in the western part, but they are subject farther east to the backwater of the St. Lawrence. The soil is a fertile loam, mixed in parts with sand and clay.

Products: Dairy products, hay, oats and potatoes.

Average values of farm land range from $50 to $100 an acre.

MORRISTOWN: The surface is rolling and rises almost abruptly from the St. Lawrence and Black Lake, with a gradual elevation toward the center. Chippewa Creek is the principal stream. The soil is a gravelly loam, generally fertile. It overlies the Potsdam sandstone, which crops out in many places.

Products: Dairy products, including condensed milk.

The average value of farm land is $40 an acre.

NORFOLK: The surface is moderately uneven, the Raquette River furnishing drainage and waterpower. The soil is generally fertile, resting on drift deposits of gravel and marine clay and underlaid by calciferous sandstone. The eastern part is sandy.

Products: Dairy products, mostly fluid milk, oats and potatoes.

Average values of farm land range from $25 to $75 an acre.

OSWEGATCHIE: The surface is low and level. The Oswegatchie River is the principal stream. The soil is a fertile loam with clay subsoil.

Products: Butter, cheese, fluid milk, hay, barley and oats.

The average value of farm land is $50 an acre.

PARISHVILLE: The surface is level in the north and considerably broken in the south. It is watered by both the Raquette and St. Regis rivers and contains several small lakes. The soil is a deep loam in the north; light and sandy in the south.

Products: Milk, potatoes, hay and maple products.

Average values of farm land range from $5 to $35 an acre.

PIERCEFIELD: The surface is generally low and a large part is quite swampy. As a considerable portion is still covered with forest, this is not classed as an agricultural town.

Products: Lumber, dairy products, potatoes and maple sugar.

The average value of farm land is $25 an acre.

PIERREPONT: The surface is diversified with hills and valleys. The Raquette River and branches of the Oswegatchie are the principal streams. The soil in the north is well adapted to grazing, while that in the south is light and sandy. The manufacture of cheese and butter are important occupations.

Products: Milk, cheese, hay, potatoes and maple products.

Average values of farm land range from $8 to $30 an acre.

PITCAIRN: The surface is much broken by ridges, separated by swamps, lakes and fertile intervales. It is well watered by the

Oswegatchie and numerous smaller streams. The soil is light and sandy with a few alluvial flats along the streams. Agriculture consists mostly in the production of excellent butter and cheese and in the raising of grain and potatoes.

Products: Dairy products, potatoes and maple products.

Average values of farm land range from $15 to $30 an acre.

POTSDAM: The surface is rolling, with a soil of deep rich loam. The streams are Grass and Raquette rivers, the latter affording a large amount of waterpower. There are extensive quarries of sandstone above the village. This is an important agricultural town and every part is under improvement.

Products: Hay, oats, corn and potatoes.

Average values of farm land range from $25 to $100 an acre.

ROSSIE: The surface is level or rolling in the east, but much broken in the west by ledges of gneiss, limestone, and sandstone. Numerous streams cross the town, including Indian River and the Oswegatchie, the latter crossing it twice.

Products: Hay, oats, corn and potatoes.

Average values of farm land range from $50 to $100 an acre.

RUSSELL: This town was originally heavily timbered and the southern part is still largely forest-covered, hilly, or mountainous and rugged. The soil is light and sandy and where susceptible of cultivation is very fertile. Grass River flows diagonally across the town and numerous smaller streams furnish excellent drainage.

Products: Milk, butter, cheese, maple products and hay.

Average values of farm land range from $20 to $40 an acre.

STOCKHOLM: The surface is rolling and watered by the St. Regis River and its branches. The soil is a productive loam and this town is one of the best agricultural districts in the county.

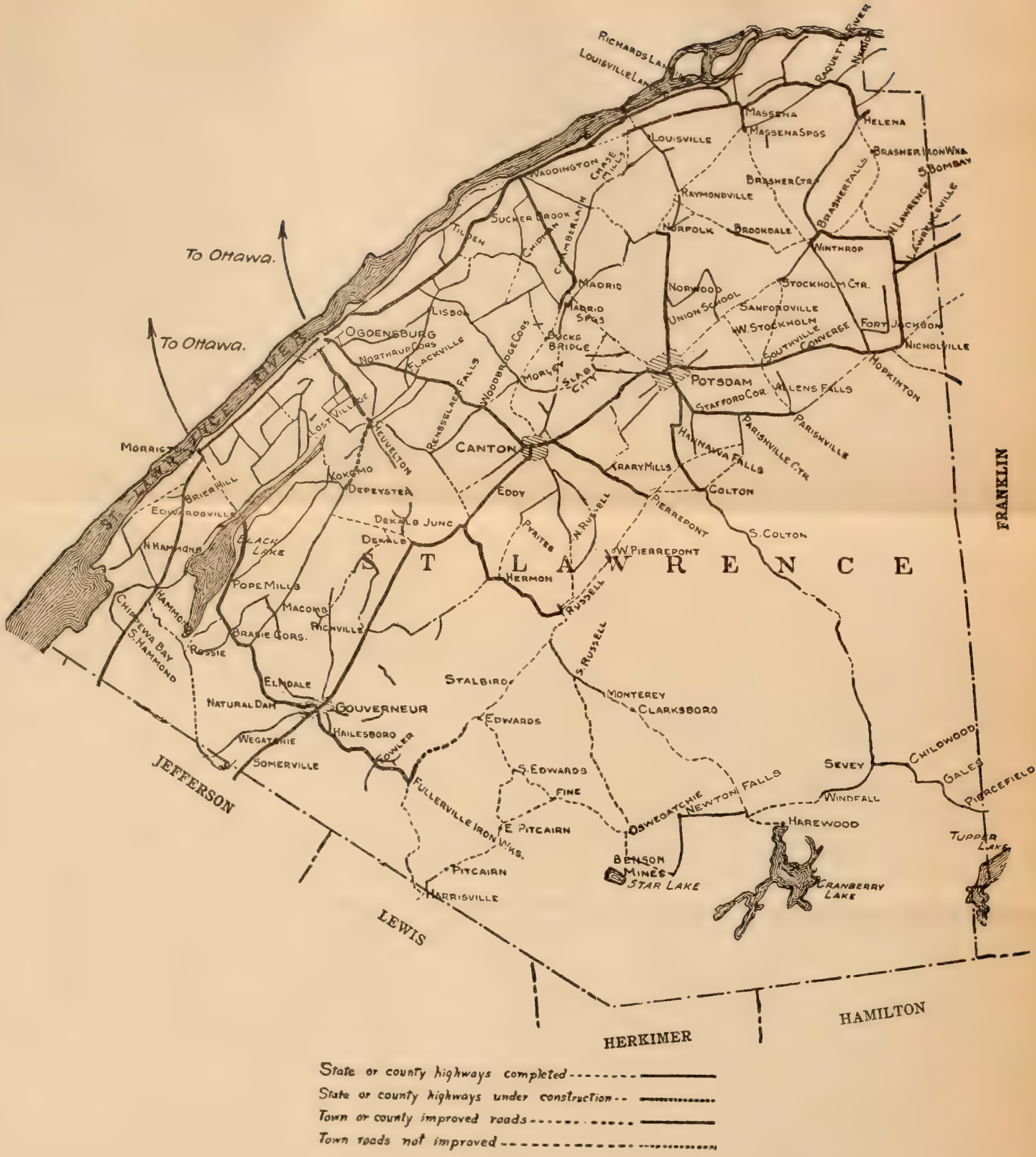
Products: Dairy products, potatoes, hay and maple products.

Average values of farm land range from $10 to $30 an acre.

WADDINGTON: The surface is level or gently undulating. The soil is a light, sandy loam, generally fertile. The St. Lawrence River furnishes excellent waterpower at the village of Waddington.

Products: Fluid and condensed milk and hay.

Average values of farm land range from $20 to $40 an acre.


St. Lawrence River
Richards Landing
Louisville Landing
Raquette River
Nyando
Massena
Massena Spgs
Helena
Brasher Iron Wks.
S. Bombay
Brasher Ctr.
Brasher Falls
N. Lawrence
Lawrenceville
Louisville
Waddington
Chase Mills
Raymondville
Norfolk
Brookdale
Winthrop
Sucker Brook
Tilden
Chipman
Cumberland
Madrid
Madrid Spgs
Norwood
Union School
Stockholm Ctr.
Sanfordville
W. Stockholm
Southville
Converse
Fort Jackson
Nicholville
Hopkinton
To Ottawa.
To Ottawa.
Ogdensburg
Lisbon
Northrup Cors
Flackville
Bucks Bridge
Woodbridge Cors
Morley
Slab City
Potsdam
Stafford Cor.
Allens Falls
Parishville
Parishville Ctr
Hannawa Falls
Colton
Rensselaer Falls
Heuvelton
Lost Village
Morristown
Canton
Krary Mills
Brier Hill
Kokomo
Depeyster
Eddy
Edwardsville
Dekalb Junc
Dekalb
Pyrites
N. Russell
Pierrepont
S. Colton
N. Hammond
Black Lake
W. Pierrepont
ST LAWRENCE
Hermon
Pope Mills
Macomb
Russell
Hammond
Chippewa Bay
S. Hammond
Brasie Cors.
Richville
Rossie
S. Russell
Stalbird
Elmdale
Monterey
Clarksboro
Natural Dam
Gouverneur
Edwards
Hailesboro
Wegatchie
Fowler
Somerville
Jefferson
S. Edwards
Sevey
Childwood
Gales
Piercefield
Fine
Newton Falls
Windfall
Oswegatchie
Harewood
Fullerville Iron Wks.
E. Pitcairn
Tupper Lake
Benson Mines
Star Lake
Cranberry Lake
Pitcairn
Harrisville
Lewis
Franklin
Hamilton
Herkimer
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

One line of the New York Central running from Syracuse extends through the county to Massena Springs, where it connects with the Grand Trunk Railway. This line has a branch extending from Gouverneur to Edwards.

A second line, extending from Utica, enters the west side of the county and runs to Ogdensburg, from which point a branch extends to DeKalb Junction, connecting with the line first mentioned.

A third line extends from Carthage, Jefferson County, where it connects with the Utica line, entering the southern part of the county. This road makes connections with the Newton Falls and Northern and the Cranberry Lake, two small roads running into the mining section.

A fourth line crosses the southeastern part, connecting with the main line at Herkimer and extending north to Montreal. The New York and Ottawa, which crosses the northeastern part of the county, connecting with the Grand Trunk Railway at Helena is a branch of this line. The Grand Trunk Railway extends from Massena Springs east and north to Canadian points. The Adirondack and St. Lawrence is a short line running from De Kalb Junction to Hermon.

The Rutland Railroad extends across the northern part from near Ogdensburg to all points east. The Norwood and St. Lawrence connects with the Rutland and the New York Central at Norwood, and extends north and west to Waddington on the St. Lawrence.

The Grass River

In order that ocean-going steamships may carry clay from Brazil to Massena for the purpose of aluminum manufactures, the Grass River is being dredged for their accommodation.

Improved highways

The Adirondack trail extending from Utica to the northern part of the state passes through Gouverneur, Canton, Potsdam, and through points east and north. The highway from Syracuse follows the course of the St. Lawrence River along the western and northern borders of St. Lawrence County. A direct route connects Ogdensburg and Canton. Another road runs from Waddington southeast to Madrid Springs. Improved highways connecting with the Adirondack trail are as follows: from Gouverneur southeast to Fullerville Iron Works and northwest to Black Lake; from DeKalb Junction to Russell; from Canton to Pierrepont; from Potsdam south to Colton, southeast to Parishville, and north to Norfolk; and from Lawrenceville to Brasher Falls.

There are in the county 259 miles of completed improved highways, with 25 miles additional under construction.

AVAILABLE MARKETS

Ogdensburg, which is a port of entry on the St. Lawrence River and a terminus of several railroads, is the principal coal and grain receiving center for points in northern New York and the New England states. This city is the principal local market for all kinds of farm produce. A considerable amount of lumber is shipped, and there are several flour mills in the city. It is the seat of a state hospital for the insane and of the Hepburn Hospital.

Massena stands second in importance as a local market. Here is located the Aluminum Company of America, which is the largest establishment of its kind, producing 200 tons of aluminum per day. Clay for this purpose is obtained in the western states.

Canton is the seat of St. Lawrence University, with which is connected a state school of agriculture. At the village of Potsdam is located a state normal school and several other excellent institutions of learning, including the Clarkson School of Technology and the Crane Institute of Music.

The principal outside markets for dairy products are New York and Boston, supplies for the latter city including a large quantity of a special soft cheese. Cattle raised in the county are generally sold in Buffalo, Albany, or New York.

Although New York is the leading paper market, immense amounts of manila paper are sent to Boston, Chicago, and the West.

St. Lawrence County, which is the largest milk-producing county in the state, stands first in the number of establishments for handling milk and milk products, of which there are 148. During 1919 over 423,000,000 pounds of milk was delivered at these establishments. Besides shipping nearly 60,000,000 pounds of market milk there were manufactured in the county 1½ million pounds of butter; 13,000,000 pounds of American cheese, a large amount of foreign types of cheese and over 65,000,000 pounds of condensed and evaporated milk.

The agricultural organizations are as follows:

Farmers' Company of West Stockholm.
Franklin County National Farm Loan Association.
Gouverneur Agricultural and Mechanical Society.
Gouverneur Co-operative Association, Inc.
Granges: Pomona and 34 subordinate granges.
Heuvelton Dairy Improvement Association.
North Country National Farm Loan Association.
Oswegatchie Agricultural Society.
Pilot Ayrshire Club.
Raquette Valley and St. Regis Valley Agricultural Society.
St. Lawrence County Agricultural Society
St. Lawrence County Cheesemakers Patrons' Association.
St. Lawrence County Dairymen's League.
St. Lawrence County Farm Bureau Association.
St. Lawrence County Holstein-Friesian Breeders' Club.

EDUCATIONAL FACILITIES

At Canton is located the St. Lawrence University, including one of the state schools of agriculture. Potsdam is the seat of a state normal school and the Clarkson College of Technology. Approved courses in agriculture and home making are given at Gouverneur.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Benson Mines, Brasher Falls, Brier Hill, Canton, Colton, De Kalb Junction, Edwards, Gouverneur, Hailsboro, Hammond, Helena, Hermon, Heuvelton, Russells, Lisbon, Madrid, Massena, Morristown, Norfolk, North Lawrence, Norwood, Oswegatchie, Ogdensburg, Parishville, Piercefield, Potsdam, Pyrites, Rensselaer Falls, Richville, and Waddington.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	1,061,516 acres
Number of farms	8,224
Per cent of farm land improved	51.4

LIVE STOCK PRODUCTS

Milk sold	38,400,281 gal.
Cream sold	85,184 gal.
Butter fat sold	1,487,320 lbs.
Butter produced	463,227 lbs.
Cheese produced	13,550 lbs.
Eggs produced	1,839,997 doz.
Wool produced	9,989 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	22,665
Cattle	162,262
Sheep	18,513
Swine	33,935
Poultry	315,991

BEES

Number of colonies	5,369

SELECTED CROPS

Cereals:	Acres	Yield
Corn	9,761	316,911 bu.
Oats	74,589	1,972,670 bu.
Wheat	550	9.188 bu.
Barley	2,811	75,975 bu.
Buckwheat	2,774	63,916 bu.
Rye	311	4,208 bu.
Hay and foreage	245,857	421,612 tons
Special Crops:		
Potatoes	7,321	1,184,162 bu.
Vegetables other than potatoes	1,960	.... bu.
Dry edible beans	134	4,459 bu.
Dry peas	124	3,067 bu.

Fruits:		
Apples	150,130 trees	180,406 bu.
Peaches and nectarines	9 trees	11 bu.
Pears	428 trees	330 bu.
Plums and prunes	1,155 trees	135 bu.
Cherries	989 trees	154 bu.
Grapes	833 vines	15,564 lbs.
Small fruits	70 acres	79,034 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	7,278	6,796

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	20,623	20,785
Cattle	151,384	141,629
Sheep	12,766	9,676
Swine	20,304	17,856
Poultry	300,896	263,317

BEES

	1917 Number	1918 Number
Number of colonies	4,155	5,783

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	10,524	7,479	80,262 bu.
Oats	52,171	64,641	1,666,921 bu.
Barley	2,802	3,120	49,236 bu.
Buckwheat	2,990	2,919	33,847 bu.
Wheat (winter)	184	200	2,139 bu.
Wheat (spring)	1,122	3,057	40,168 bu.
Rye	680	406	3,144 bu.
Hay and Forage:			
Alfalfa	1,606	1,336	3,598 tons
Other hay	162,667	165,736	311,106 tons
Corn (ensilage)	24,214	23,273	141,703 tons
Corn (fodder)	....	8,799	....
Special Crops:			
Field beans	2,058	2,365	15,170 bu.
Cabbage	428	232	941 tons
Potatoes	6,682	7,032	882,238 bu.
Roots raised for stock food	....	381	....
Canning factory crops	214	34	....
Other vegetables and garden crops	943	1,442	....
Fruits:			
Apples	2,113	3,070	53,647 bu.
Pears	1	2	....
Plums	4	....	30 lbs.
Cherries	6	....	....
Vineyard	27	....	....
Small fruits	69	26	....

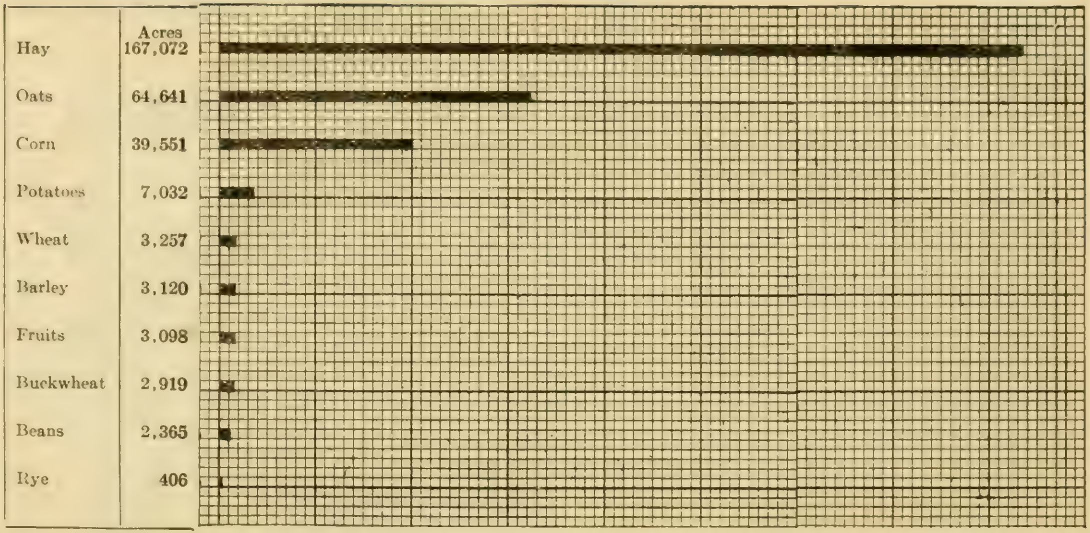
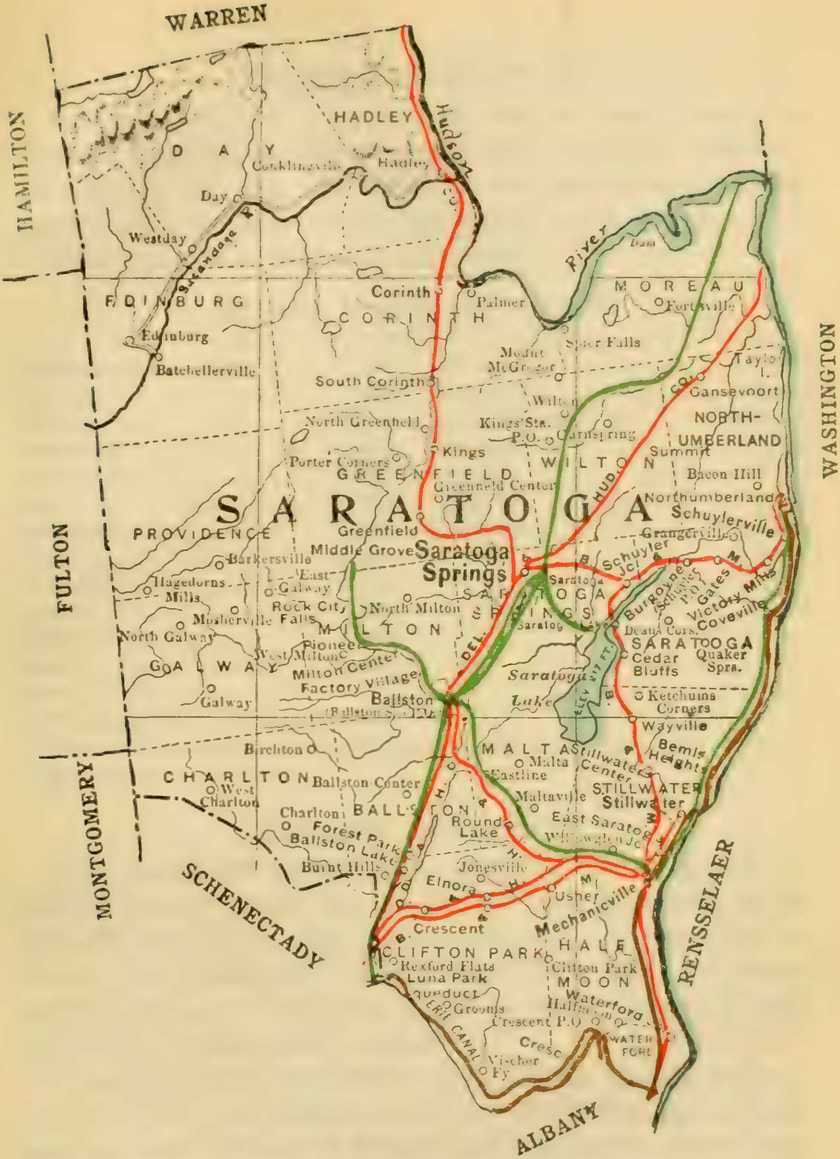


FIG. 134.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN ST. LAWRENCE COUNTY


WARREN
HAMILTON
FULTON
MONTGOMERY
SCHENECTADY
ALBANY
RENSSELAER
WASHINGTON
SARATOGA
HADLEY
DAY
EDINBURG
CORINTH
PROVIDENCE
GREENFIELD
MILTON
GALWAY
CHARLTON
BALLSTON
MALTA
MOREAU
WILTON
NORTHUMBERLAND
SARATOGA SPRINGS
STILLWATER
CLIFTON PARK
HALF MOON
Hudson River
Saratoga Springs
Saratoga Lake
Corinth
South Corinth
Ballston
Schuylerville
Mechanicville
Waterford
Stillwater
Crescent
Round Lake
ERIE CANAL

Map of Saratoga County, Showing Townships

Red, railroads; green, electric roads; brown, canals

SARATOGA COUNTY

Saratoga County lies on the west bank of the Hudson, the Mohawk forming the extreme southeastern boundary. Its total area is 526,720 acres. From east to west the county measures approximately 26 miles, and from north to south 38 miles.

The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Saratoga Springs (city)	13,792	Milton	5,702
Ballston*	2,464	Moreau	3,240
Charlton	1,080	Northumberland	1,120
Clifton Park	2,391	Providence	512
Corinth	2,661	Saratoga	3,814
Day	541	Stillwater	6,837
Edinburgh	785	Waterford	5,487
Galway	1,278	Wilton	1,090
Greenfield	1,642		
Hadley	689	Total	62,982
Halfmoon	6,559		
Malta	1,298		

---

* Ballston Spa is the county seat.

Note.— Mechanicville, which was incorporated as a city in 1915, now has a population of over 8,000.

HISTORICAL ASSOCIATIONS

This county was formed from Albany in 1791. Within its present boundaries once lay the favorite hunting grounds of the Mohawk. One of the most famous of these hunting grounds was known to the Indians as "Sa-ragh-to-ga," from which the county derives its name. This term is said to imply "place of swift waters" or "place of salt springs."

As early as 1684 this hillside country of the Hudson was sold by the chiefs of the Mohawks to Peter Philip Schuyler and six other eminent citizens of Albany, and the Indian grants were confirmed by the English government. This became known as the Saratoga patent.

The Indian name for the territory in which the famous mineral springs were found was Kayaderosseras, another of their favorite hunting grounds. This territory, including the greater part of the land in this county, was granted by the English to a company of thirteen individuals. The two patents were united by the colonial government into a district in 1772. As late as the middle of the nineteenth century land was still held under a rent charge of from fifteen to twenty cents an acre, derived originally from the Kayaderosseras patent. It is said that the mineral waters were first used for medicinal purposes by Sir William Johnson.

The first settlements in the county were made by the Dutch within a few years after their first colonization of the country about Albany. Lying in the great thoroughfare between the English settlement at Albany and the French posts on Lake Champlain, the passing of military parties checked the progress of settlement and exposed the few hardy pioneers to all the dangers and anxieties of border warfare. Until the conquest of Canada by the English, settlements were made slowly. After this, although formed rapidly, they were confined for some years to the banks of the Hudson and Mohawk.

During the Revolution some of the most important events of the war transpired within the limits of this county. On the approach of Burgoyne in 1777, General Schuyler retreated from Fort Edward to Saratoga, then to Stillwater, and finally to the mouth of the Mohawk. The inhabitants of the county fled to Albany, leaving their homes and fields of grain to be destroyed by the enemy. General Gates, who superseded General Schuyler, fortified himself at Bemus Heights, where two battles were fought. Burgoyne then took position on the heights of Saratoga, just west of the present village of Schuylerville, where he finally surrendered, October 17, 1777.

The destruction during this campaign of nearly every evidence of civilized occupation within the county, together with the fear of Indian hostilities, prevented the immediate return to the abandoned lands. After the close of the war, however, settlements spread rapidly.

The early but abortive efforts toward opening a canal from the Mohawk along the west bank of the Hudson, around the rapids, were mostly made in Saratoga County. Although the enterprise failed because private means were inadequate, it was the beginning of efforts that finally led to the construction of the Erie and Champlain canals, to which our state owes so much of its prosperity.

Railroads were also constructed at an early date in this county, the village of Saratoga being the terminus of the second and third railroads built in the state — the Saratoga and Schenectady, and the Rensselaer and Saratoga — the Albany and Schenectady having been built but a short time previous.

On Mount McGregor, in the town of Moreau, stands a cottage of interest as the last home of General U. S. Grant, maintained in the same condition as when he occupied it. Both the Grant cottage and the Saratoga Springs reservation are owned by New York State.

DEVELOPMENT OF INDUSTRY

The early settlers were engaged chiefly in grain and stock raising. In the northern part of the county lumbering and tanning were extensively carried on. Molding sand of a superior quality was an important article of export, largely from the towns of Waterford and Clifton Park, to points along the canal and the Hudson.

Hay, which is the most important crop in the county, is largely consumed on the farms. Of the cereals, corn and oats are most extensively grown. Rye and buckwheat are grown to some extent in all parts of the county. Dairying is a prominent industry and milk is an important product, particularly in the southern part. The greater part of the milk is shipped outside of the county, except in the more remote sections, where butter is made.

Commercial fruit growing is carried on to some extent, apples being the leading crop. Pears, cherries, and plums are also produced. Fruit is raised in the towns of Charlton, Ballston, and Clifton Park, as well as in Northumberland, Stillwater, and Saratoga. In the eastern and southeastern parts of the county truck gardening is carried on to a small extent, the leading crops being cucumbers and melons. Other important products are strawberries, raspberries, and sweet corn. The mountainous portions of the northern and northwestern parts were never extensively developed in agriculture and lumbering has remained the chief occupation in these sections.

CLIMATE AND RAINFALL

Climatological records for Saratoga County are taken from the Spier Falls station, the elevation of which is 400 feet. The present observer is Thomas F. Malone.

The average dates for the last killing frost in spring and the first in fall are May 9 and September 26 respectively, giving a growing season of 140 days.

In the following table the records cover the period 1902 to 1918, with the exception of the snowfall, the records for which began in 1904:

RECORDS OF TEMPERATURE AND PRECIPITATION AT SPIER FALLS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	19.9	60	1906	—32	1914*	3.06	1.46	1909	15.5
February.....	17.8	57	1911	—31	1908	3.40	3.70	1914	19.2
March........	31.4	75	1910	—18	1918	3.34	2.55	1913	11.4
April.........	43.9	92	1915	8	1911	2.60	1.70	1910	3.6
May.........	57.4	95	1911	24	1911*	3.33	2.48	1906	T.
June.........	64.3	95	1913	31	1912	3.76	3.74	1904	......
July..........	70.1	102	1911	43	1913*	3.27	1.85	1915	......
August.......	67.4	100	1917	35	1911	2.80	2.68	1914	......
September....	59.9	92	1916*	19	1911	3.69	3.45	1912	......
October......	49.6	82	1913	17	1907	3.55	2.74	1912	T.
November....	35.9	77	1914	—5	1914	2.24	2.37	1912	5.0
December.....	24.3	66	1912	—39	1917	3.47	2.00	1906	14.7
Year.........	45.2	102	1911	—39	1917	38.51	3.74	1904	69.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Saratoga County is hilly or undulating in the south and mountainous in the north. The Palmertown or Luzerne Mountains extend from Warren County through the western part of Moreau and Wilton and the eastern part of Corinth into Greenfield, where they terminate in a series of low, irregular hills. The Hudson River breaks through this range on the northern border of the county in a deep ravine three miles in extent. A group of isolated hills extends through the western portions of Stillwater and Saratoga. A broad intervale lies along the Hudson, bordered by a range of clay bluffs 40 to 200 feet high. From the summits of these bluffs an extensive sand plain extends westward to the foot of the mountains, covering the greater part of Moreau, Wilton, Northumberland, Saratoga Springs, Malta, and Clifton Park. The southwestern portion of the county is rolling or moderately hilly.

The Hudson, which flows nearly seventy miles along the eastern border, is interrupted by falls and crossed by several dams and bridges. The extreme southeastern part is bordered by the Mohawk. The Sacandaga is navigable for boats and steamboats of light draft for about twenty miles above Conklingville Falls; below the falls it flows to the Hudson in a series of rapids. Kayaderosseras Creek drains the central part of the county and flows into Saratoga Lake. There are numerous small lakes in the county.

The soil among the mountains is a light, sandy, or gravelly loam, and best adapted to grazing, while along the rivers it is a deep, fertile loam and alluvium.

DESCRIPTION BY TOWNSHIPS

BALLSTON: The surface is gently rolling. Ballston Lake, in the southeastern part, is a long, narrow, deep body of water, the outlet of which is the principal inlet of Round Lake. The soil is generally a fertile loam, a section east of the lake including the Allis silt loam.

Products: Corn, hay, potatoes, rye, oats, dairy products and fruit.

Average values of farm land range from $50 to $80 per acre.

CHARLTON: The surface is undulating, with a gentle inclination toward the south. The soil is an excellent quality of sandy, gravelly, and silty loam. Ledges of limestone in the western part afford an excellent quality of building stone and are extensively quarried.

Products: Dairy products and poultry.

Average values of farm land range from $50 to $65 per acre.

CLIFTON PARK: The surface is level or undulating, except in the northeast, where it is broken by sand hills and ravines. A line of rugged bluffs borders upon the Mohawk valley. A belt of silty and gravelly loam extends along the river above the bluffs.

Products: Hay, fruit, potatoes and corn.

Average values of farm land range from $20 to $60 per acre.

CORINTH: The Kayaderosseras Mountains occupy the central and northern parts, and the Palmertown Mountains the southeast corner. These mountains are very steep and the summits are rocky and mostly covered with forests. A valley four miles wide separates the two ranges. The Great Falls in the Hudson are on the border of this town. Among the mountains in the northern part are several fine lakes. The soil is a sandy and stony loam.

Products: Corn, oats, potatoes, buckwheat, rye, vegetables, lumber, sheep, maple sugar and dairy products.

Average values of farm land range from $5 to $40 per acre.

DAY: The surface is generally mountainous, being highest in the center and west, where some peaks rise from 2,500 to 2,700 feet. The Sacandaga River, which is navigable through the town, flows in a narrow valley through the southern part. Lumbering is the principal occupation and not much of the land is suitable for farming. The soil is principally a stony and sandy loam.

Products: Potatoes, buckwheat, rye, corn, garden vegetables, maple sugar, lumber and sheep.

Average values of farm land range from $5 to $20 per acre.

EDINBURGH: The surface is largely covered by two high mountain ridges separated by the valley of the Sacandaga River. These ridges are rocky and broken, with a thin sandy or gravelly soil, and are covered with forests. Lumbering is the chief occupation of the people.

Products: Potatoes, buckwheat, rye, corn, sheep, poultry, vegetables, maple sugar and lumber.

Average values of farm land range from $5 to $30 per acre.

GALWAY: The surface is hilly in the north, and gently undulating in the south. The soil is generally a sandy, gravelly loam.

Products: Potatoes, corn, oats, hay, berries and buckwheat.

Average values of farm land range from $25 to $60 per acre.

GREENFIELD: The Palmertown Mountains lie on the eastern border and the Kayaderosseras range in the western part. A valley six miles wide separates these ranges. The principal streams are the Kayaderosseras and its branches. The soil is generally a gravelly or sandy loam. Some sections are very stony. A graphite mine is operated within the town.

Products: Oats, corn, potatoes, buckwheat and poultry.

Average values of farm land range from $15 to $65 per acre.

HADLEY: The surface is largely mountainous, West Mountain reaching a height of 2,665 feet. The Sacandaga River flows through a narrow valley in the southern part; below Conklingsville its current is rapid and frequently interrupted by falls. Lumbering and tanning are carried on. A large quantity of gneiss from this town was used in building the Capitol at Albany. The soil is generally a coarse, yellowish, and often unproductive sand and gravel.

Products: Potatoes, buckwheat, rye, corn, vegetables, maple sugar, lumber, sheep and dairy products.

Average values of farm land range from $5 to $20 per acre.

HALFMOON: The surface is undulating and broken by the narrow ravines of small streams. The river intervales on the east and south are about one-half mile wide and are bordered by a line of steep clay bluffs 60 to 100 feet high. Moulding sand of an excellent quality is found in this town. The soil is silt and gravelly loam in the uplands, and a fine quality of alluvium in the intervales.

Products: Hay, fruit, potatoes and corn.

Average values of farm land range from $25 to $70 an acre.

MALTA: The surface is chiefly an undulating upland sixty to eighty feet above Saratoga Lake and broken by the deep gullies of small streams. Round Lake, in the southern part, is nearly circular and one mile in diameter. A swampy region covering an area of several hundred acres lies in the northeastern part of the town at the mouth of the Kayaderosseras. The soil is principally a sandy loam with silt and muck in the lowlands.

Products: Corn, hay, oats, rye, buckwheat, garden truck, fruit, potatoes, and dairy products.

Average values of farm land range from $5 to $75 per acre.

MILTON: The surface is moderately hilly in the north and undulating in the south, with a slight inclination toward the Kayaderosseras, which flows through the center of the town. This stream has a rapid fall and furnishes a valuable waterpower. In the northern part are limestone ridges which are quarried for building stone and lime. The Saratoga mineral spring region extends through the southeastern part. The soil is generally a sandy loam.

Products: Corn, rye, oats, potatoes, legumes and grasses.

Average values of farm land range from $5 to $75 per acre.

MOREAU: The surface is rocky and broken by the Palmertown Mountains in the west. The central and eastern portions are undulating and broken by the narrow ravines of small streams. Along the course of the Hudson are numerous rapids and waterfalls. The soil is generally a light, yellow, sandy loam.

Products: Corn, hay, oats, potatoes, buckwheat and rye.

Average values of farm land range from $5 to $60 an acre.

NORTHUMBERLAND: The surface is level or undulating, and broken by deep ravines. A line of clay and slate bluffs, 30 to 100 feet high, extends along the river. The soil is generally a light sandy loam, particularly in the western portion. Some very good land lies between Bacon Hill and Gansevoort.

Products: Corn, hay, oats, potatoes, buckwheat and rye.

The average value of farm land is $75 per acre, except in light sandy soil in the west.

PROVIDENCE: The surface is broken and hilly, and the high ranges along the northern and eastern borders are mostly covered with forests. Several small mill streams rise in the mountains,

FIG. 135.— FARM VIEW IN SARATOGA COUNTY

and flow southwest into Fulton County. The soil is chiefly a coarse, yellow sand or gravel of poor quality; large tracts are stony and rocky.

Products: Potatoes, corn, oats and forage crops.

Average values of farm land range from $25 to $50 an acre.

Saratoga: A range of high, rounded, and sometimes terraced hills extend north and south through the central and western parts. These hills rise 450 feet above the Hudson and slope in every direction. Narrow alluvial flats bordered by high clay bluffs extend along the Hudson. Saratoga Lake forms a portion of the western boundary. Fish Creek, the outlet of the lake, which flows through the northern part of the town, has several fine mill sites along its course. The mineral springs, known as "Quaker Springs," issue from the Hudson River slate in a ravine a little southeast of the center of the town. They contain lime, magnesia, and iron with carbonic gas and salts of soda. The soil north of Fish Creek is light and sandy, and in the remaining parts of the town it is a gravelly or silty loam.

Products: Hay, potatoes, oats, rye, dairy products, poultry and apples.

Average values of farm land range from $30 to $80 per acre.

Saratoga Springs: The surface is rolling or moderately hilly. An extended tract lying north of Saratoga Lake, along the course of Owl Pond Creek, is low and swampy. The far-famed mineral springs, which give to the town its name, are situated about three miles northwest of Saratoga Lake. They are near the center of the mineral springs region, which has a radius of nearly ten miles. The soil is an inferior quality of yellowish, sandy loam.

Products: Corn, oats, hay, rye, buckwheat, potatoes and truck crops.

Average values of farm land range from $5 to $100 an acre.

Stillwater: The surface is uneven in the south and moderately high in the north. A range of bluffs 6 to 100 feet high borders on the intervales of the Hudson and Anthony's Kill. The streams are generally small brooks flowing in deep gullies worn in the drift deposits. The soil is alluvial in the river intervales. West of the river bluffs is a wide belt of silty loam and in the southwestern part is a sandy tract interspersed with swamps.

Products: Corn, hay, oats, potatoes, rye and fruit.

Average values of farm land range from $25 to $75 an acre.

Waterford: The surface is mostly an upland, 100 to 300 feet above the river. The Mohawk is bordered by an almost perpendicular range of slate bluffs, and the Hudson valley by a range of clay bluffs. Valuable waterpower is furnished by the falls in the Mohawk. The five locks in the Barge Canal at Waterford make a combined lift of 169 feet, which is twice as high as the whole lift of the Panama Canal. The soil is a sandy, clayey, alluvial loam, with shaly loam on the ridges.

Products: Hay, fruit, potatoes and corn.

Average values of farm land range from $25 to $60 an acre.

Wilton: The Palmertown Mountains with their steep, rocky slopes and forest-covered summits, extend across the northwestern corner. The center and southwest are generally undulating or broken by low ridges. The soil in the east and southeast is a yellow sandy loam resting on clay, and in some places swampy.

Products: Corn, rye, potatoes, oats, clovers, grasses, wheat, vetch, dairy products, berries and poultry.

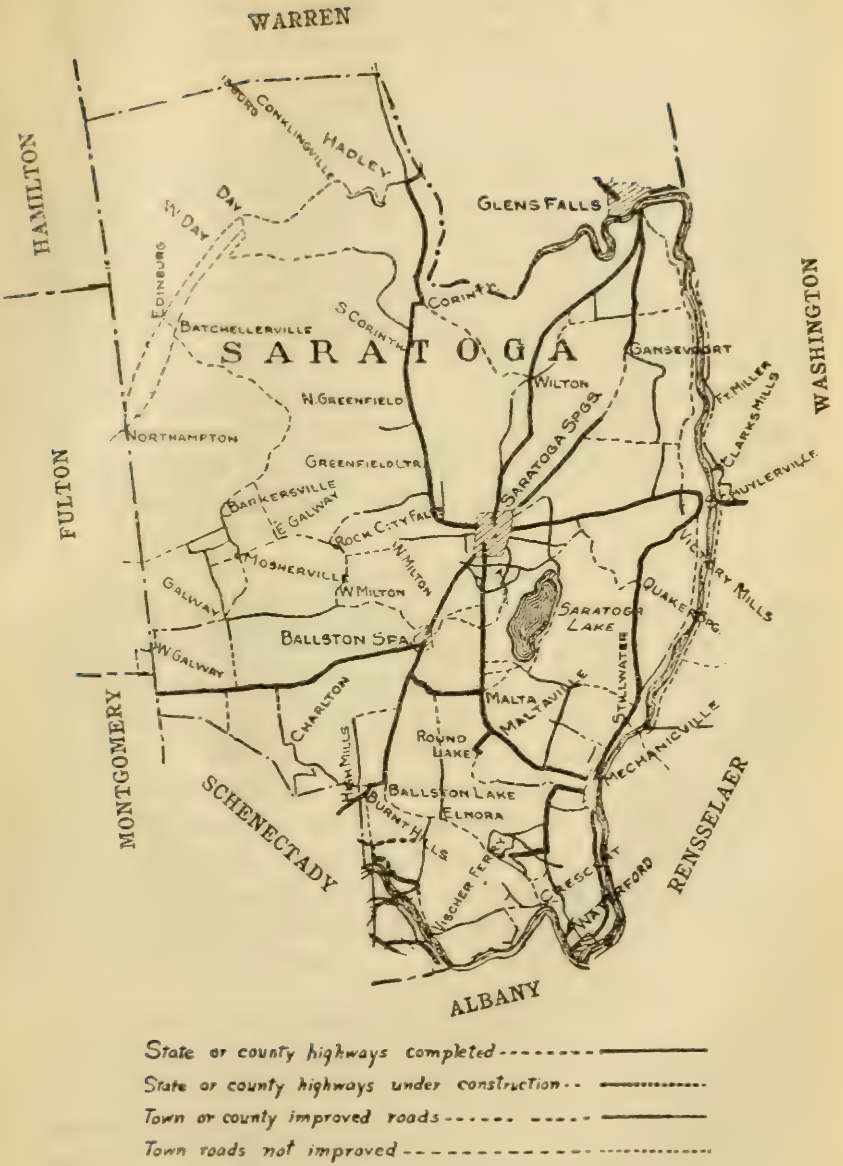
Average values of farm land range from $5 to $75 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The line of the Delaware and Hudson Railroad passing through the center of Warren County also passes south through the center of Saratoga County. At Saratoga Springs it meets the main line running north to Montreal, which enters Saratoga County from Fort Edward in Washington County and continues in one line to Ballston. Here it divides, one branch continuing in a general southwest direction to Schenectady, and the other turning southeast to Mechanicville, thence south to Albany. These two branches are connected by a line crossing the town of Clifton Park. The Boston and Maine extends through the eastern and southern parts of the county, connecting with the Greenwich and


WARREN
HAMILTON
WASHINGTON
FULTON
MONTGOMERY
SCHENECTADY
RENSSELAER
ALBANY
SARATOGA
Conklingville
Hadley
Day
W. Day
Edinburg
Batchellerville
Glens Falls
Corinth
S. Corinth
Gansevoort
Wilton
Ft. Miller
Clarks Mills
Schuylerville
N. Greenfield
Northampton
Greenfield Ctr.
Saratoga Spgs.
Barkersville
E. Galway
Rock City Falls
Mosherville
N. Milton
W. Milton
Galway
Victory Mills
Quaker Spg.
Saratoga Lake
Stillwater
Ballston Spa
W. Galway
Charlton
Malta
Maltaville
Round Lake
Mechanicville
High Mills
Ballston Lake
Elnora
Burnt Hills
Vischer Ferry
Crescent
Waterford
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Johnsonville at Northumberland, and with the Delaware and Hudson at Saratoga Springs, also extending south to Mechanicville, and west into Schenectady County.

Electric Roads

The Hudson Valley electric road passes from Warrensburg southwest to Glens Falls. From this place a line extends into Saratoga County through Saratoga Springs and Ballston, and southeast to Mechanicville, where it meets another line extending from Glens Falls down the east side of the Hudson, crossing the river and entering Saratoga County at Northumberland, then passing down the west side of the river to Waterford. From Saratoga Springs the Schenectady Railway extends southwest to Schenectady, two lines running thence to Watervliet and Albany. Another electric line from Ballston crosses the town of Milton, terminating at Middlegrove in Greenfield.

Improved Highways

Six improved highways center at Saratoga Springs. Of these, two extend to the Adirondack section, one passing through Glens Falls, and the other crossing the towns of Corinth and Hadley; the third road extends into the town of Wilton; a fourth runs east and south to Mechanicville, meeting at that place a fifth road from Saratoga Springs, and extending south to Albany; a sixth road leads from Saratoga Springs southwest to Ballston Spa and Schenectady, with another highway leading west from Ballston Spa, the latter road being under construction to the county line. The total extent of these roads is 125 miles, 19 miles additional being under construction.

AVAILABLE MARKETS

Saratoga Springs is the principal market within the county It is widely known as a summer resort and is celebrated for its mineral springs. Schenectady is an excellent nearby market. It receives a large share of the milk produced in the town of Ballston; also a considerable amount of the truck crops produced in the southern part of the county. Milk and other products are sent also to Troy, Watervliet, Cohoes. and Glens Falls, as well as to Boston and other New England cities.

The agricultural organization are as follows:

Adirondack Beekeepers' Association.
Charlton Agricultural Society.
Collar City National Farm Loan Association.
Granges: Pomona and 11 subordinate granges.
Harmony Farmers' Club.
Mohawk Valley National Farm Loan Association.
Patrons of Industry: 1 association.
Saratoga County Agricultural Society.
Saratoga County Dairymen's League.
Saratoga County Farm Bureau Association.
Saratoga County Guernsey Breeders' Association.
Saratoga County National Farm Loan Association.
Saratoga County Poultry and Pet Stock Association.
Saratoga County Sheep Breeders' Association.
Saratoga Creamery Association.

EDUCATIONAL FACILITIES

The Skidmore School of Arts is located at Saratoga Springs. The Burnt Hills-Ballston Lake School gives approved courses in agriculture and home making.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Corinth, Ballston Spa, Galway, Mechanicville, Round Lake, Saratoga Springs, Schuylerville, South Glens Falls, Stillwater, and Waterford.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	392,185 acres
Number of farms	3,611
Per cent of farm land improved	62.7

LIVE STOCK PRODUCTS

Milk sold	2,880,635 gal.
Cream sold	17,305 gal.
Butter fat sold	759,121 lbs.
Butter produced	441,853 lbs.
Cheese produced	8,397 lbs.
Eggs produced	1,094,176 doz.
Wool produced	6,442 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8,115
Cattle	25,382
Sheep	11,483
Swine	10,612
Poultry	178,318

BEES

Number of colonies	1,835

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	14, 568	482, 561 bu.
Oats	15, 819	435, 812 bu.
Wheat	127	3, 466 bu.
Barley	103	2, 462 bu.
Buckwheat	6,810	130,163 bu.
Rye	6, 645	103, 261 bu.
Hay and forage	75, 604	75, 421 tons
Special Crops:		
Potatoes	7,278	579,652 bu.
Vegetables, other than potatoes	2,018	....
Dry edible beans	66	1,148 bu.
Dry peas	17	316 bu.
Fruits:		
Apples	137,202 trees	175,868 bu.
Peaches and nectarines	1,338 trees	14 bu.
Pears	15,718 trees	10,427 bu.
Plums and prunes	11,039 trees	3,257 bu.
Cherries	13,187 trees	2,866 bu.
Quinces	118 trees	9 bu.
Grapes	4,907 vines	69,681 lbs.
Small fruits	223 acres	371,609 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,134	3,180

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	6,705	6,333
Cattle	21,811	22,205
Sheep	6,860	6,082
Swine	6,554	5,643
Poultry	168,211	156,118

BEES

Number of colonies	2,532	2,010

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	9,568	9,102	154,363 bu.
Oats	15,384	13,394	333,083 bu.
Barley	252	253	2,934 bu.
Buckwheat	4,325	5,887	64,152 bu.
Wheat (winter)	498	510	5,962 bu.
Wheat (spring)	201	130	1,267 bu.
Rye	5,582	4,085	63,663 bu.
Hay and Forage:			
Alfalfa	345	627	976 tons
Other hay	59,345	61,472	64,567 tons
Corn (ensilage)	3,218	4,524	24,268 tons
Corn (fodder)	....	1,645	....
Special crops:			
Field beans	457	900	4,479 bu.
Cabbage	434	377	1,728 tons
Potatoes	3,828	6,468	301,365 bu.
Roots raised for stock food	....	492	....
Canning factory crops	50	50	....
Other vegetables and garden crops	1,009	1,227	....
Fruits:			
Apples	4,800	5,323	90,934 bu.
Peaches	71	76	534 bu.
Pears	200	292	5,669 bu.
Plums	161	223	56,447 lbs.
Cherries	165	188	21,224 lbs.
Quinces	....	16	14 bu.
Vineyard	52	55	6,325 lbs.
Small fruits	317	556	....

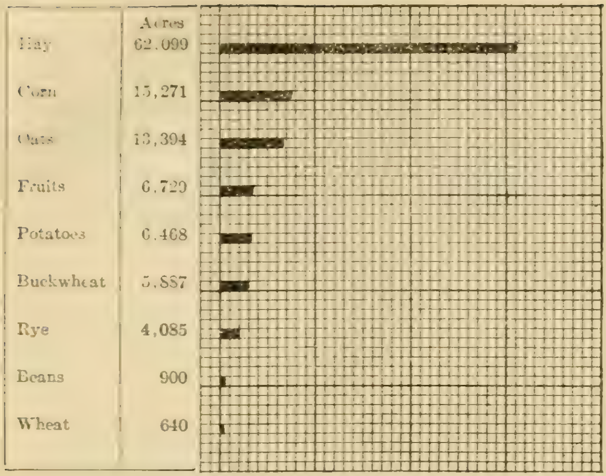


FIG. 136.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN SARATOGA COUNTY

SCHENECTADY COUNTY

This county lies in the valley of the Mohawk and extends to within about seven miles of its mouth, the greater part being included between the Mohawk River and the Schoharie Creek. Its total area is about 131,840 acres; it extends approximately 15 miles from north to south, and 25 miles from east to west. The population is shown in the following table:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Schenectady (city)*	80,381	Rotterdam	6,198
Duanesburgh	2,280		
Glenville	6,538	Total	98,625
Niskayuna	2,607		
Princetown	621		

---

* Schenectady is the county seat.

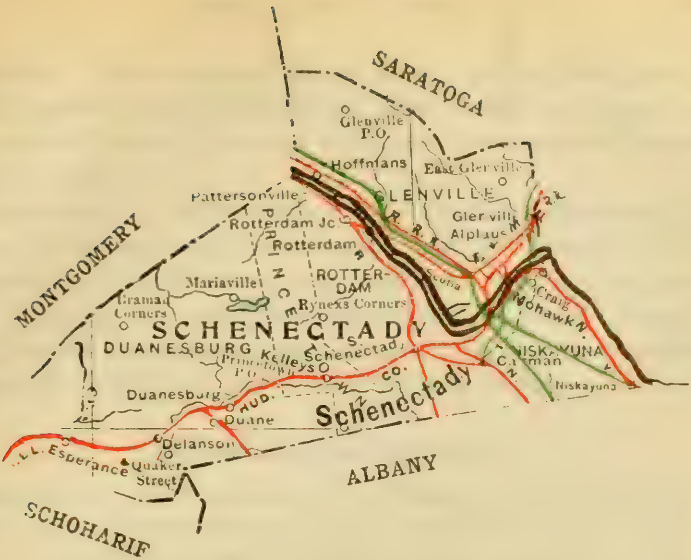
NOTE.— The preliminary reports of the 1920 census indicate a population of 88,723 in the city of Schenectady, and a total of 109,363 in Schenectady County.

HISTORICAL ASSOCIATIONS

Schenectady was formed from Albany in 1809, its name being derived from the original Indian name of the site of Schenectady (Scagh-negh-ta-da), meaning, " the end of the pine woods." This name for the same reason was applied by the aborigines to the site of Albany. The site of Schenectady is said to have been the principal seat of the Mohawks even before the confederacy of the Iroquois, or Five Nations, and was abandoned at a very early period in the colonial history.

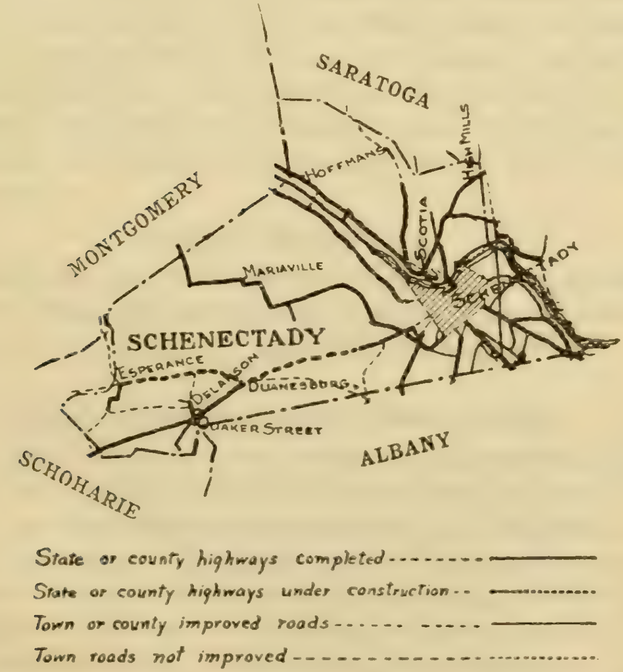
The first grant of lands was made to some Hollanders in 1661 on condition that they purchase the soil from the Indians. The deed was signed eleven years later by four Mohawk chiefs. Although the town was enclosed by a stockade, in February, 1690, during the French and Indian War, the settlement was surprised at night by a party of French and Indians and nearly every house was burned. The few who escaped massacre fled to Albany. The town recovered but slowly from this disaster.

After the Revolution the settlement shared in the general prosperity and business profited greatly from the improvements in


SARATOGA
Glenville P.O.
Hoffmans
East Glenville
GLENVILLE
Pattersonville
Rotterdam Jc.
Rotterdam
Glenville
Alplaus
MONTGOMERY
Mariaville
ROTTERDAM
Scotia
Craig
Mohawk
Rynex Corners
Braman Corners
SCHENECTADY
DUANESBURG
Princetown P.O.
Kelleys
Schenectady
NISKAYUNA
Carman
Niskayuna
Duanesburg
Duane
Schenectady
Delanson
Esperance
Quaker Street
ALBANY
SCHOHARIE

Map of Schenectady County, Showing Townships

Red, railroads; green, electric roads; brown, canals


SARATOGA
High Mills
Hoffmans
Scotia
MONTGOMERY
Mariaville
SCHENECTADY
Esperance
Delanson
Duanesburg
Quaker Street
ALBANY
SCHOHARIE
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

navigation. The completion of the Erie Canal in 1825 gave an added impulse, large quantities of merchandise being sent here for shipment to avoid the more circuitous route between Schenectady and Troy.

Schenectady was the terminus of the first two railroads in this state — the Albany and Schenectady, which was opened in 1831, and the Saratoga and Schenectady, which was completed two years later. The city has since developed rapidly, especially since the establishment of extensive manufactories, including the American Locomotive Works and the General Electric Works.

DEVELOPMENT OF INDUSTRY

The earliest records point to the raising of corn. Dairying became a prominent industry in very early times. The valley of the Mohawk was extensively devoted to the cultivation of broom corn for many years, producing in 1870 nearly half of the entire broom corn crop of the state.

The growth of Schenectady City has effected a complete change in the agriculture of the county. In order to supply the demand for milk a large number of farmers have changed from general agriculture to dairying. Even within the last ten years, the town of Niskayuna has developed a profitable garden industry that now supplies, not only Schenectady, but also Albany, Troy, Cohoes, and Watervliet.

CLIMATE AND RAINFALL

Climatological data for Schenectady County not being available, a fair idea of general conditions for the county may be obtained by consulting the records of Albany County (page 95).

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface consists of a valley and upland generally broken by ridges and isolated hills 200 to 350 feet above the river. The highlands are the northern continuation of the Helderberg and Schoharie mountains. The greater part of the surface is covered with a thick deposit of drift, consisting principally of clay in the west and sand in the east — the former productive, but the latter of little value for tillage. The Mohawk River, Schoharie Creek, and Normans Kill are the principal streams, the valleys being generally bordered by steep slopes rising to a height of about 300 feet. The valleys are best adapted to tillage and the hills to pasturage.

DESCRIPTION BY TOWNSHIPS

DUANESBURGH: The surface is an upland broken by the narrow valleys and gullies of small streams. The hills bordering on Schoharie Creek and Normans Kill are steep and in some places rocky. The town is well adapted to dairying. The soil is principally a stiff clay loam with a slight intermixture of gravel.

Products: Dairy products, hay, oats, buckwheat and fruit.
Average values of farm land range from $15 to $50 an acre.

GLENVILLE: The surface is broken and hilly in the central and western parts, the hills rising 800 to 1,000 feet or more above sea level. The eastern part is nearly level. The soil among the hills is a stiff clay underlaid by hardpan with an occasional outcropping of slate. In the eastern part it is a sandy and gravelly loam. The Mohawk intervales are very fertile.

Products: Dairy products, hay, oats, fruit and buckwheat.
Average values of farm land range from $10 to $50 an acre.

NISKAYUNA: The surface is mostly an upland with steep bluffs rising from the river valley. The intervales are very rich and productive. A strip of land about one mile wide, extending back from the summits of the bluffs, has a hard clay soil, and a considerable portion of it is swampy and not well adapted to cultivation. Through the south the soil is sandy.

Products: Garden crops and small fruits.
Average values of farm land range from $50 to $100 an acre.

PRINCETOWN: The surface is a broken upland gently descending toward the southeast. It is well adapted to grazing. The soil is a heavy clay loam underlaid by hardpan.

Products: Dairy products, hay, oats, buckwheat and fruit.
Average values of farm land range from $15 to $60 an acre.

ROTTERDAM: The surface is broken and hilly in the northwest, a level intervale extending from the center toward the south, and

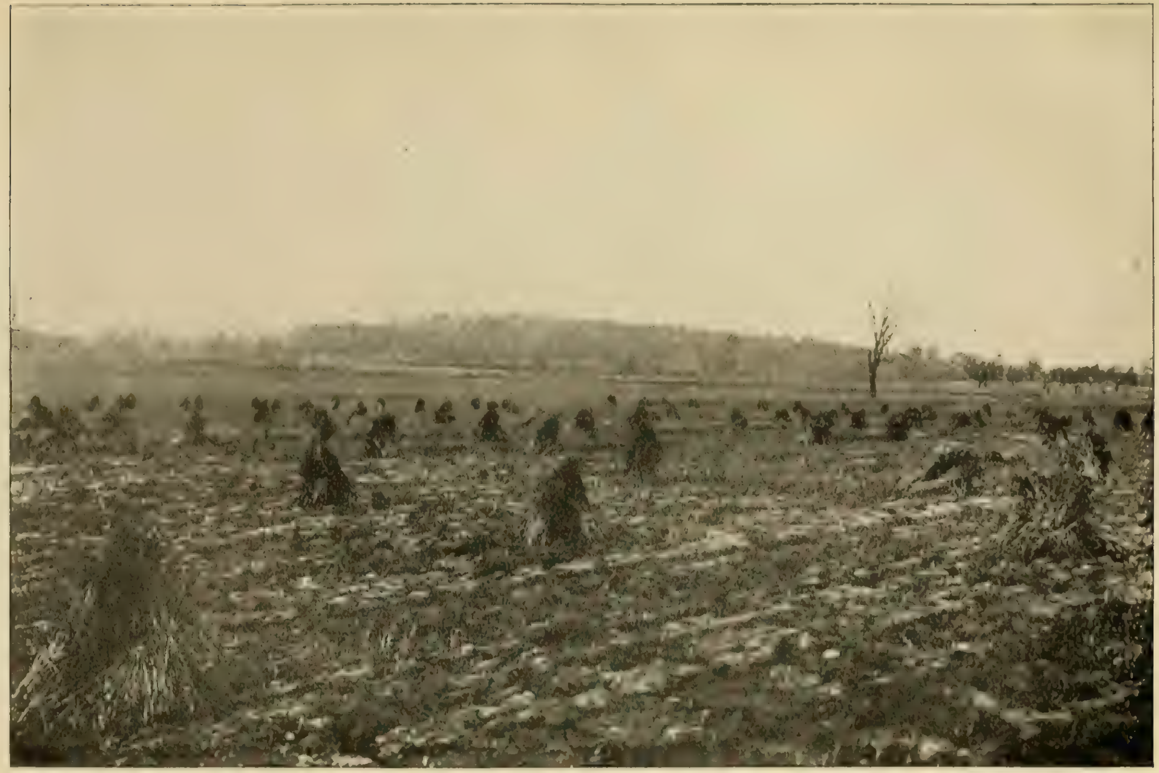


FIG. 137.—FARM VIEW IN SCHENECTADY COUNTY

a high plain in the east. While the hills are sandy and not very productive, the alluvial flats are very fertile. Near Schenectady this town is more of a residential than an agricultural section.

Products: Dairy products, garden crops, fruit, hay, oats and corn.

Average values of farm land range from $10 to $60 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Lines of the New York Central Railroad enter Schenectady County from Watervliet, Albany, and Ravena, all centering at Schenectady. From this point two lines extend west across the state.

The Delaware and Hudson crosses the county south of the center, a branch in the town of Duanesburgh running southeast to Albany.

The Boston and Maine connects with the New York Central at Rotterdam Junction and extends easterly to Mechanicville.

Electric Roads

The electric lines of the Schenectady Railway extend northeast to Saratoga; southeast to Troy, and southeast to Albany.

Another electric road runs from Schenectady northwest through Amsterdam and Johnstown to Gloversville.

Waterways

The Barge Canal and the Mohawk River extend east and west through the county.

Improved Highways

Two improved highways lead from Schenectady southeast to Watervliet and to Albany, and northwest to Amsterdam.

A third highway takes a circuitous course west and north to Amsterdam. Another leads north to Ballston Spa and Saratoga.

There are in the county 77 miles of completed improved highways with 12 miles additional under construction.

AVAILABLE MARKETS

As previously mentioned, Schenectady is the principal market within the county. It is a very important railroad center and is located on the Erie Canal.

Schenectady is extensively engaged in manufacturing. The American Locomotive Works and the factories of the General Electric Company are among the most important of their kind in the world. There are also various other manufacturing interests, including machinery, agricultural implements, carpets, and knit goods.

Just outside the county excellent markets are found in the cities of Albany, Cohoes, Watervliet, and Troy.

The agricultural organizations are as follows:

Granges: Pomona and 2 subordinate granges.
Mohawk Valley National Farm Loan Association.
Mohawk Valley Poultry Club.
Schenectady County Dairymen's League.
Schenectady County Farm Bureau Association.
Schenectady Market Growers' Co-operative Association.

EDUCATIONAL FACILITIES

Schenectady is the seat of Union University.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Rotterdam Junction, Schenectady (2), and Scotia.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	106,251 acres
Number of farms	1,027
Per cent of farm land improved	80.1

LIVE STOCK PRODUCTS

Milk sold	876,490 gal.
Cream sold	7,730 gal.
Butter fat sold	191,740 lbs.
Butter produced	198,658 lbs.
Cheese produced	130 lbs.
Eggs produced	362,920 doz.
Wool produced	1,928 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	3,162
Cattle	7,721
Sheep	3,501
Swine	2,952
Poultry	62,771

BEES

Number of colonies	1,431

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	3,476	109.694 bu.
Oats	9,326	247.945 bu.
Wheat	19	466 bu.
Barley	238	5,641 bu.
Buckwheat	4,392	102,165 bu.
Rye	2,591	40,259 bu.
Hay and forage	31,714	33,346 tons
Special crops:		
Potatoes	1,135	87,140 bu.
Vegetables, other than potatoes	732	....
Dry edible beans	40	906 bu.
Dry peas	2	37 bu.
Fruits:		
Apples	49,632 trees	82,252 bu.
Peaches and nectarines	729 trees	51 bu.
Pears	4,719 trees	3,613 bu.
Plums and prunes	7,204 trees	2,337 bu.
Cherries	6,368 trees	2,004 bu.
Quinces	81 trees	10 bu.
Grapes	2,398 vines	29,885 lbs.
Small fruits	156 acres	212,752 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,040	1,012

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	2,677	2,406
Cattle	7,045	6,745
Sheep	2,287	1,833
Swine	2,210	2,053
Poultry	56,960	44,945

BEES

Number of colonies	1,367	1,651

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	2,244	2,390	35,180 bu.
Oats	10,392	7,038	123,880 bu.
Barley	293	284	3,904 bu.
Buckwheat	3,261	2,645	35,734 bu.
Wheat (winter)	131	114	1,466 bu.
Wheat (spring)	143	148	1,041 bu.
Rye	2,614	1,967	30,484 bu.
Hay and forage:			
Alfalfa	151	268	434 tons
Other hay	30,330	26,269	29,149 tons
Corn (ensilage)	1,918	1,313	9,172 tons
Corn (fodder)	....	869	....
Special crops:			
Field beans	218	406	2,249 bu.
Cabbage	202	232	1,401 tons
Potatoes	1,018	960	36,856 bu.
Roots raised for stock food	....	56	....
Canning factory crops	52	110	....
Other vegetables and garden crops	754	750	....
Fruits:			
Apples	1,558	1,717	32,583 bu.
Peaches	32	40	479 bu.
Pears	97	242	2,632 bu.
Plums	92	131	12,720 lbs.
Cherries	68	101	7,690 lbs.
Vineyard	13	11	11,093 lbs.
Small fruits	197	514	....

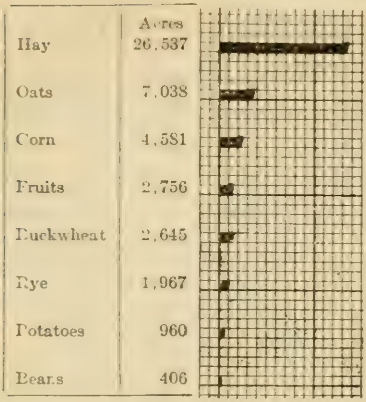


FIG. 138.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN SCHENECTADY COUNTY

SCHOHARIE COUNTY

This is an interior county lying in the east central part of the state just south of the Mohawk valley and centrally distant thirty-five miles from Albany. It has an area of 410,880 acres; from north to south its average extent is 30 miles, and from east to west 23 miles. The population is shown in the following table:

Population by Townships

(Census of 1915)

Blenheim	530	Richmondville	1,460
Broome	756	Schoharie*	2,438
Carlisle	963	Seward	1,380
Cobleskill	3,870	Sharon	1,781
Conesville	681	Summit	1,046
Esperance	970	Wright	926
Fulton	1,350		
Gilboa	1,420	Total	23,005
Jefferson	1,181		
Middleburgh	2,253		

---

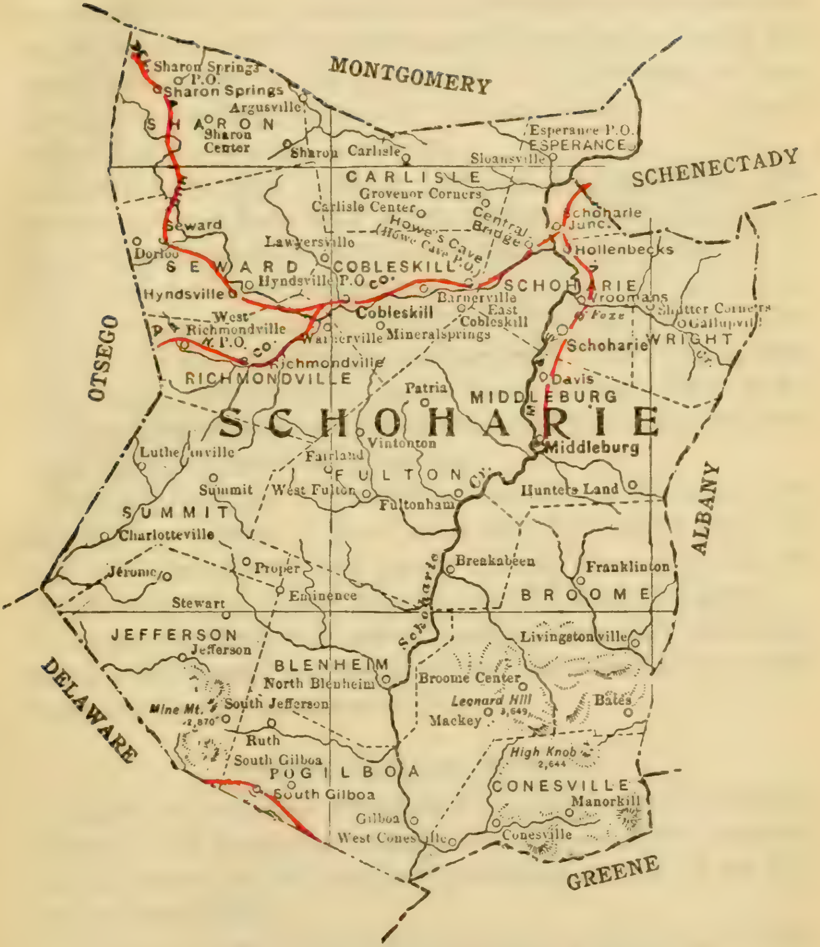
*Schoharie, in the town of Schoharie, is the county seat.

HISTORICAL ASSOCIATIONS

Schoharie County was formed from Albany and Otsego in 1795, and a small part of Greene was annexed in 1836. Its name is said to signify "drift wood." This arises from the point where the Lime Kill and Little Schoharie flow into Schoharie Creek from opposite sides, drift wood having accumulated in quantities so great as to form a natural bridge.

The land now included in the county of Schoharie formed part of the Indian hunting grounds. On the advent of the whites a small tribe of Indians occupied the Schoharie Valley. The Mohegans were stationed in considerable numbers near the location of the present Middleburgh village.

The first white settlement was made by German Palatines, numbering from six to seven hundred. These people had been living on the Palatinates in the lower part of Germany so handicapped by taxation that they barely made a living. The English Board of Trade made them an offer of land to be paid for in pitch,


MONTGOMERY
SCHENECTADY
OTSEGO
ALBANY
DELAWARE
GREENE
SCHOHARIE
Sharon Springs P.O.
Sharon Springs
Argusville
SHARON
Sharon Center
Sharon
Carlisle
Sloansville
Esperance P.O.
ESPERANCE
CARLISLE
Grovenor Corners
Carlisle Center
Central Bridge
Howe's Cave
(Howe's Cave P.O.)
Schoharie Junc.
Hollenbecks
Seward
Dorloo
SEWARD
Lawyersville
COBLESKILL
Hyndsville P.O.
Hyndsville
Barnerville
SCHOHARIE
Vroomans
Fox
Shutter Corners
Gallupville
WRIGHT
Cobleskill
East Cobleskill
Mineralsprings
Warnerville
West Richmondville P.O.
Richmondville
RICHMONDVILLE
Schoharie
Davis
Patria
MIDDLEBURG
Middleburg
Lutheranville
Fairland
Vintonton
FULTON
Summit
West Fulton
Fultonham
Hunters Land
SUMMIT
Charlotteville
Jerome
Proper
Breakabeen
Franklinton
Eminence
Stewart
BROOME
JEFFERSON
Jefferson
Schoharie Cr.
Livingstonville
BLENHEIM
North Blenheim
Broome Center
Mine Mt. 3,370
South Jefferson
Leonard Hill 3,649
Mackey
Bates
Ruth
South Gilboa
High Knob 2,644
GILBOA
South Gilboa
CONESVILLE
Manorkill
Gilboa
West Conesville
Conesville

Map of Schoharie County, Showing Townships
Red lines indicate railroads

tar, turpentine, and resin. As the necessary pine trees were lacking in the Schoharie valley the Palatines were at first established at "the camps" on both sides of the Hudson. Feeling a serious grievance at not being located in the promised "Schorie," their discontent became so great that, when insistent petitions failed of the desired effect, they undertook the journey by themselves during the winter of 1712-13, following the Indian trails through the forest and settling on the present site of Middleburgh village. Soon after, the Dutch settled at "Vroomansland," two or three miles above the German settlement.

In the early days of these settlements, corn, which, with potatoes, formed their chief article of diet, could be ground no nearer than Schenectady, the men carrying it in bags on their backs. After some years the first grist mill in the county was built on Mill Creek, near Fox Creek. At about 1806, two Yankees put a machine in the old mill for carding wool. This was a great improvement over the old method of hand carding. They carded 200 pounds of wool in twenty-four hours and were obliged to work night and day to handle their business.

Repeated attempts at establishing railroads in the county having failed, a number of plank roads were built about 1850. In 1865 the first railroad cars passed through the county, and the railroads proved to be very important to its industrial progress.

During the Revolution several conflicts took place within the limits of the county, and the inhabitants were continually exposed to the attacks of small parties of Indians.

DEVELOPMENT OF INDUSTRY

Wheat and corn were among the first crops grown in Schoharie County. The production of grain was of great importance until the competition of the large grain-producing sections of the West made it unprofitable.

In the early part of the nineteenth century the growing of hops became one of the leading industries. During the last quarter-century the low prices, competition of the West, and plant diseases, have forced the growers to reduce their acreage and turn to diversified farming. At the present time hop-growing is confined to the best soils along the Schoharie and Cobleskill valleys. Dairying is now the most important industry, the chief products being market milk and butter. Alfalfa grows readily, especially in the northern part.

A generation or two ago there was in the towns of Middleburgh and Fulton a highly developed broom-corn industry, which has since been abandoned. Within the last year or two, owing to the high prices of broom corn, an effort has been made to re-establish the industry.

CLIMATE AND RAINFALL

Climatological records for Schoharie County have been taken at Sharon Springs, at an elevation of 821 feet, the present observer being W. M. Kling.

The average dates for the last killing frost in spring and the first in fall are May 7 and October 2, respectively, giving a growing season of 148 days.

The following table covers the period 1913 to 1919:

Records of Temperature and Precipitation at Sharon Springs

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	22.7	60	1916	—22	1914	2.80	1.70	1915	14.2
February	21.1	56	1918*	—27	1914	2.65	1.60	1914	14.2
March	30.4	69	1918	—10	1916	2.96	2.75	1914	20.2
April	44.7	88	1915	12	1919	3.08	1.12	1914	3.6
May	55.8	91	1914	21	1913	3.53	1.52	1916	0.2
June	63.9	95	1919	28	1913	3.70	1.45	1915	......
July	70.0	96	1919*	41	1913	4.76	5.84	1914	......
August	68.1	99	1916	39	1915*	3.36	1.70	1915	......
September	60.2	94	1914	25	1913	3.22	1.66	1918	......
October	51.5	82	1916	23	1915	3.62	2.19	1917	0.1
November	37.8	70	1914*	4	1917	2.50	1.84	1913	2.9
December	25.0	62	1914	—28	1917	3.00	1.65	1915	17.5
Year	45.9	99	1916	—28	1917	39.18	5.84	1914	73.8

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is an upland broken by mountains in the south, and by hills in the center and north. A northerly branch of the Catskill Mountains lies along the southern border, the highest summits of which are 3,000 feet above tide. From them irregular spurs extend northward through the greater part of the county. Many of the summits along the east and west borders are about 2,000 feet above tide. The high ridge along the east border and extending to Albany County, is known as the Helderberg Mountains. Limestone caverns are frequent, and the minerals which they afford are of particular interest to mineralogists. In the north the hills are generally rounded and are arable to their summits, but in the center and south the slopes are steep and often precipitous. The extreme northern part of the county is terraced like the limestone region farther west. In many places the hills bordering the streams are 1,000 feet high and sometimes very steep. Schoharie Creek and its tributaries are the principal streams. Charlotte River, a branch of the Susquehanna, rises in the western part, and Catskill Creek in the southeast. The soil in the north is a productive silty loam and in the center and south it is a silty and sandy loam, the sand predominating on the southern hills. The alluvial flats along Schoharie Creek are among the most fertile lands in the state.

A belt of limestone crosses the northern part of the county, extending through a large part of the towns of Schoharie, Cobleskill, Seward, Sharon, and Carlisle. It is in this particular locality where the alfalfa plant seems especially at home.

Farm lands vary in value according to location and improvements. The highest-priced land in the county is principally in the Schoharie valley between Middleburg and Central Bridge, where it is valued at from $150 to $225 an acre. In the Cobleskill valley, especially near the towns, farm land sells at from $75 to $150 an acre, while those in the vicinity of Seward and Sharon Springs sell at from $35 to $60 an acre. In the southern part of the county farm land can be bought for $8 to $20 an acre.

DESCRIPTION BY TOWNSHIPS

BLENHEIM: The surface is a hilly upland broken by the deep ravines of streams. The streams generally are bordered by steep hills rising to a height of 1,400 to 1,900 feet. Schoharie Creek flows north through the eastern part, receiving several tributaries from the west. A wide alluvial flat extends along its course. The soil is principally a silty loam.

Products: Hay, corn, potatoes, oats, rye and buckwheat.

Average values of farm land range from $10 to $60 an acre.

BROOME: The surface is a hilly upland broken by the deep ravines of streams. The highest summits are 2,000 feet above tide. Catskill Creek rises in the northern part and several branches of Schoharie Creek drain the northern and western portions. The soil is a gravelly and silty loam.

Products: Hay, potatoes, corn, oats, and buckwheat.

Average values of farm land range from $10 to $45 an acre.

CARLISLE: The surface consists principally of a ridge lying between the valleys of the Mohawk and Cobleskill, the summit of which is 1,100 to 1,800 feet above sea level. This ridge descends to the north by a series of terraces, and to the south by gradual slopes. The streams are small brooks. The soil is principally a silty loam.

Products: Ensilage corn, hay, buckwheat, oats, barley and potatoes.

Average values of farm land range from $10 to $75 an acre.

COBLESKILL: The surface is principally a hilly upland broken by the deep valley of the Cobleskill, which extends east and west through the center. The highest points on the north and south borders are 1,500 to 2,000 feet above sea level. The soil on the hills is a clayey loam, and in the valley it is fertile alluvium. In this town is located a state agricultural school.

Products: Potatoes, buckwheat, hops, hay, corn and oats.

Average values of farm land range from $20 to $100 an acre.

CONESVILLE: The surface is generally a hilly upland, mountainous along the east border. The highest summits are in the southeast, Richmond Mountain (3,213 ft.), and Richtmyer Peak (2,967 ft.). Schoharie Creek forms a small portion of the west boundary and Manor Kill flows through the center. The valleys of these streams are bordered by high and often nearly precipitous hills. The soil is a silty loam.

Products: Hay, potatoes, corn, oats and buckwheat.

Average values of farm land range from $10 to $40 an acre.

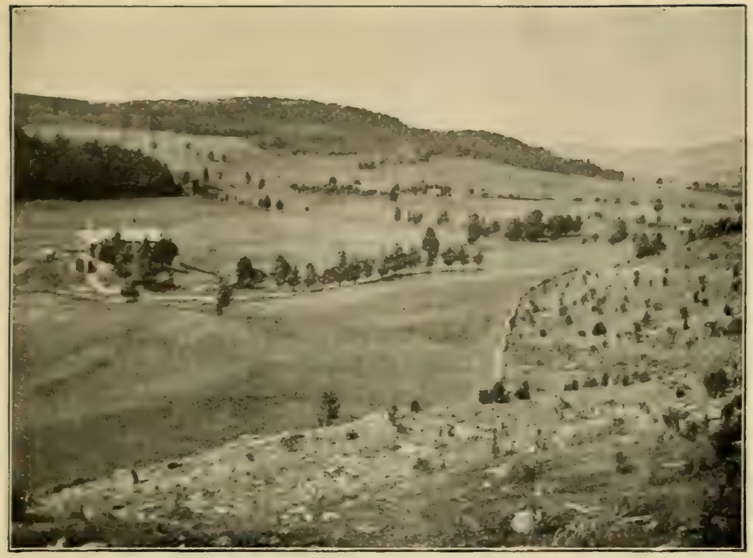


FIG. 139.— UPPER END OF BRANCH OF SCHOHARIE VALLEY, ON THE ROAD TO GILBOA, LOOKING NORTH

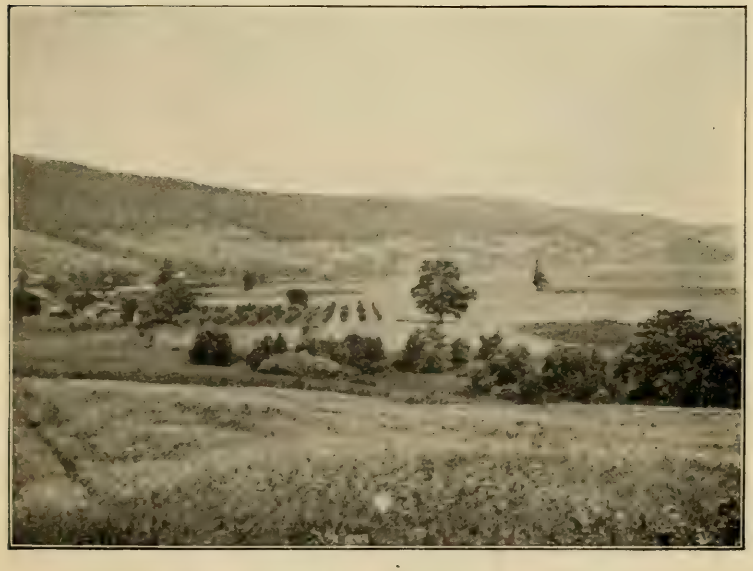


FIG. 140.— SCHOHARIE VALLEY NEAR FULTONHAM

ESPERANCE: The surface consists of two ridges extending across the town, separated in the southern part by the valley of Schoharie Creek. The highest parts are 100 to 1,200 feet above sea level. The soil is principally a silty loam.

Products: Hay, oats, buckwheat, corn and dairy products.
Average values of farm land range from $10 to $75 an acre.

FULTON: The surface is a hilly upland broken by ravines of streams. Schoharie Creek which flows north through the eastern part is the principal stream. The highest summits are about 2,000 feet above sea level. Petersburg Mountain, in the northwest, reaches a height of 2,300 feet. The hills next the creek are usually steep, but farther west they have more gradual slopes. The soil is a gravelly and silty loam. Where the Schoharie Creek flows through the town, the flats are broad and offer relatively larger areas of level and fertile lands. Those near Vromans are among the best in the county.

Products: General farm crops.
Average values of farm land range from $10 to $100 an acre.

GILBOA: The surface is a mountainous upland broken by deep ravines. Schoharie Creek and its tributaries are the principal streams, and are frequently bordered by steep hillsides. The highest peaks in the east reach a height of over 2,600 feet above tide. The soil is generally a gravelly and silty loam, although in some sections there are rounded clay hills.

Products: Hay, corn, oats, buckwheat, barley and potatoes.
Average values of farm land range from $10 to $100 an acre.

JEFFERSON: The surface is a hilly upland, the principal summits rising 1,000 feet above the valleys and 2,000 feet above tide. Mine and Bald hills in the extreme southern part reach elevations of 2,820 feet and 2,778 feet respectively. A high ridge extending northeast and southwest through the center forms the watershed between the Delaware and Mohawk rivers. The soil is a gravelly and silty loam.

Products: Hay, corn, potatoes, oats, buckwheat and rye.
Average values of farm land range from $10 to $25 an acre.

MIDDLEBURGH: The surface is a hilly upland divided into two ridges by the valley of Schoharie Creek, which extends north and south through the town. The highest summits are 1,600 to 1,800 feet above sea level. The hills bordering the streams are usually steep, and often precipitous. The soil is a silty loam on the hills and a fertile sandy loam in the valleys. In the vicinity of Middleburgh village are considerable areas of alluvial flats, which are level and almost famous for their fertility.

Products: Hops, corn, hay, oats and dairy products.

Average values of farm range from $10 to $200 an acre.

RICHMONDVILLE: The surface is a hilly upland separated into two distinct parts by the valley of Cobleskill Creek which extends east and west through the center. The highest summits are 1,800 to 2,100 feet above the valley. The soil is generally a silty loam.

Products: Hops.

Average values of farm land range from $10 to $150 an acre.

SCHOHARIE: The surface is a hilly upland broken by the deep valleys of streams. The slopes are generally gradual, the hills rising from 1,300 to 1,700 feet above sea level. Schoharie Creek flows north through the center, receiving Fox Creek from the east and the Cobleskill from the west. In the limestone region are numerous caverns. The soil on the hills is a silty loam, and in the valleys a gravelly loam and alluvium. In a few cases there is a fairly well-developed orchard industry; there are also two or three prosperous nurseries in the town.

Products: General farm crops.

Average values of farm land range from $10 to $200 an acre.

SEWARD: The surface is a hilly broken upland, the highest summits being 1,500 to 1,800 feet above the valley. West Creek, the principal stream, flows southeast through the center. The soil is a fertile silty loam.

Products: Hops, hay, corn, oats, potatoes and buckwheat.

Average values of farm land range from $10 to $60 an acre.

SHARON: The surface is a rolling and hilly upland. The highest summits in the southwest are 1,500 to 1,800 feet above sea level.

West Creek is the principal stream. The soil is a strong, limestone till, favorable for growing alfalfa. Two farms in the town have reached a high development in the production of red raspberries. Sharon Springs is widely known as a summer resort, and for the sulphur waters that break forth in great abundance.

Products: Hay, corn, oats, barley, buckwheat, hops, potatoes, apples, wheat and small fruits.

Average values of farm land range from $30 to $100 an acre.

Summit: The surface is a broken, hilly upland, the central ridge forming a portion of the watershed between the Susquehanna and Mohawk rivers. The highest summits are 2,000 to 2,400 feet above tide. Charlotte River, the principal stream, flows through the western part. The soil is a gravelly and silty loam, and especially adapted to the production of potatoes.

Products: Hay, potatoes, oats and buckwheat.

Average values of farm land range from $10 to $45 an acre.

Wright: The surface is a hilly upland. The highest summits along the southern line are 1,700 to 1,900 feet above sea level. In the extreme southwest is a peak rising 2,100 feet. The principal stream is Fox Creek which flows northwest through the center. The soil is a silty and gravelly loam.

Products: Hay, oats, buckwheat and corn.

Average values of farm land range from $10 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The line of the Delaware and Hudson between Schoharie and Binghamton crosses the northern part of the county. Just west of Cobleskill a branch turns to the northwest and extends to Cherry Valley, in Otsego County.

At Schoharie Junction the Schoharie Valley Railroad joins the Delaware and Hudson from the south. This road is met at Schoharie by the Middleburgh and Schoharie, which extends south to Middleburgh.

The Ulster and Delaware enters the southwestern part of the county and passes through South Gilboa.

Improved Highways

An improved highway extends across the county from Quaker Street through Central Bridge, Cobleskill, and Richmondville to Oneonta. A road from Albany which passes through Gallupville unites at Vromans, with a road extending north from Middleburgh which connects near Central Bridge with the highway first mentioned. From Central Bridge a road runs north to Sloansville and another from Richmondville southwest to Summit.

There is also an improved highway between Sharon and Sharon Springs.

Along the line of the Ulster and Delaware Railroad a road leading to Binghamton passes through the southwestern part of the county.

There are in the county 57 miles of completed improved highways, with 8 miles additional under construction.

AVAILABLE MARKETS

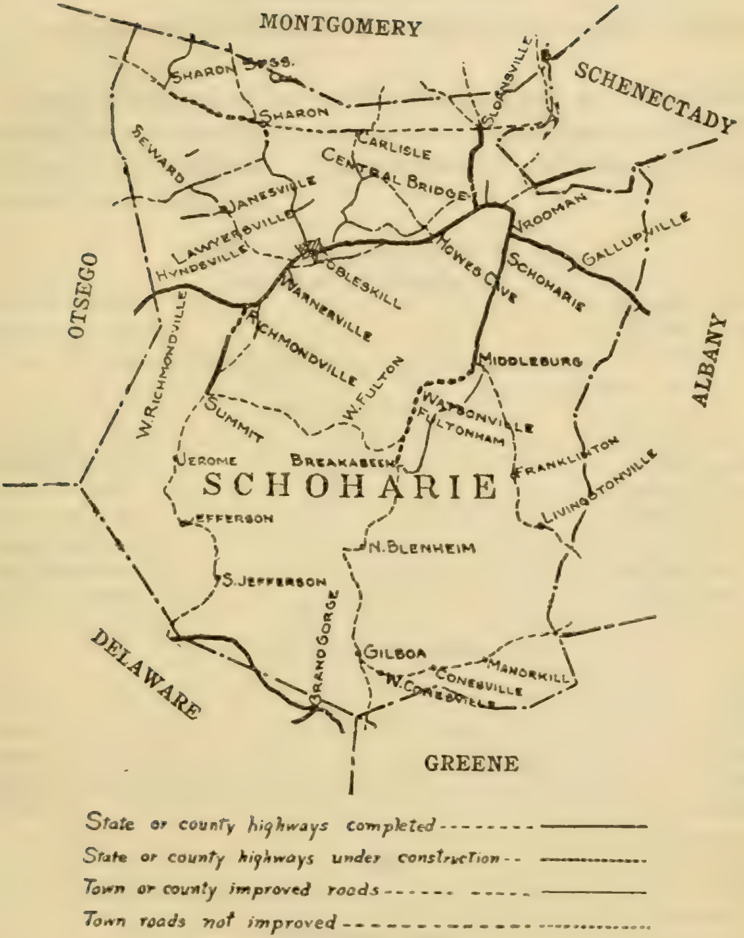
While Cobleskill is an important market, the principal markets for the products of the county are Schenectady, Albany, and New York.

Cobleskill is fortunate in having the advantages of a plant for grinding agricultural limestone. The Sheffield Farms Company maintains two milk stations in the town, one receiving only grade B milk, while the other receives only grade A. It is said that more certified milk is made within a radiùs of a mile of the village than in any other portion of the state, there being four large establishments engaged in this highly specialized dairy industry.

Although the greater part of the milk produced is sold as market milk, over a half million pounds of butter is manufactured, besides some American and some foreign types of cheese.

The agricultural organizations are as follows:

Broome Center Cooperative Creamery Co.
Capitol District National Farm Loan Association.
Cobleskill Agricultural Society.
Granges: Pomona and 9 subordinate granges.
Huntersland Cooperative Creamery.
Mohawk Valley National Farm Loan Association.
Schoharie County Breeders' Association.
Schoharie County Dairymen's League.


MONTGOMERY
SCHENECTADY
OTSEGO
ALBANY
DELAWARE
GREENE
SCHOHARIE
Sharon Spgs.
Sharon
Sloansville
Carlisle
Seward
Central Bridge
Janesville
Lawyersville
Hyndsville
Cobleskill
Vrooman
Gallupville
Howes Cave
Schoharie
Warnerville
Richmondville
W. Richmondville
W. Fulton
Middleburg
Summit
Watsonville
Fultonham
Jerome
Breakabeen
Franklinton
Livingstonville
Jefferson
N. Blenheim
S. Jefferson
Grand Gorge
Gilboa
Manorkill
Conesville
W. Conesville
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Schoharie County Farm Bureau Association.
Seward Grange Cooperative Association, Inc.
Summit Cooperative Creamery Co.
West Fulton Cooperative Creamery Co.

EDUCATIONAL FACILITIES

The Schoharie State School of Agriculture is located at Cobleskill.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Cobleskill, Jefferson, Middleburgh, Richmondville, Schoharie, Sharon Springs, and Sloan.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	371,076	acres
Number of farms	3,288	
Per cent of farm land improved	69.3	

LIVE STOCK PRODUCTS

Milk sold	5,848,883	gal.
Cream sold	15,692	gal.
Butter fat sold	2,398,411	lbs.
Butter produced	236,813	lbs.
Cheese produced	170	lbs.
Eggs produced	1,486,342	doz.
Wool produced	7,066	fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8,237
Cattle	40,743
Sheep	11,422
Swine	9,645
Poultry	191,463

BEES

Number of colonies	6,133

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	5,492	197,520
Oats	25,190	573,010
Wheat	399	9,334
Barley	638	13,582
Buckwheat	12,312	240,770
Rye	2,218	34,207

	Acres	Yield
Hay and forage	95,527	114,376 tons
Special crops:		
Potatoes	3,273	307,746 bu.
Vegetables other than potatoes	823	....
Dry edible beans	106	1,893 bu.
Dry peas	12	177 bu.
Fruits:		
Apples	163,702 trees	219,343 bu.
Peaches and nectarines	1,574 trees	51 bu.
Pears	8,671 trees	6,488 bu.
Plums and prunes	17,484 trees	6,466 bu.
Cherries	6,186 trees	1,280 bu.
Quinces	91 trees	11 bu.
Grapes	2,869 vines	58,282 lbs.
Small fruits	92 acres	119,041 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms from which reports were received	2,962	2,715

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	7,319	7,016
Cattle	38,822	36,099
Sheep	6,972	5,063
Swine	6,402	5,098
Poultry	195,503	151,935

BEES

	1917 Number	1918 Number
Number of colonies	3,903	5,594

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	2,876	2,444	59,873
Oats	22,319	20,262	482,076
Barley	1,108	1,002	16,967
Buckwheat	11,131	11,029	118,738
Wheat (winter)	743	774	15,362
Wheat (spring)	120	262	2,470
Rye	2,488	1,533	25,176

	1917	1918	
	Acres	Acres	Yield
Hay and forage:			
Alfalfa	2,047	1,418	3,224 tons
Other hay	71,906	74,981	81,786 tons
Corn (ensilage)	5,820	4,659	31,450 tons
Corn (fodder)	....	1,294	....
Special crops:			
Field beans	620	814	6,929 bu.
Cabbage	213	93	382 tons
Potatoes	3,969	3,081	189,927 bu.
Roots raised for stock food	....	43	....
Canning factory crops	36	25	....
Other vegetables and garden crops	595	630	....
Fruits:			
Apples	4,282	5,253	145,642 bu.
Peaches	7	17	255 bu.
Pears	48	76	2,322 bu.
Plums	56	52	46,721 lbs.
Cherries	59	45	33,031 lbs.
Vineyard	2	1	4,825 lbs.
Small fruits	201	99	....

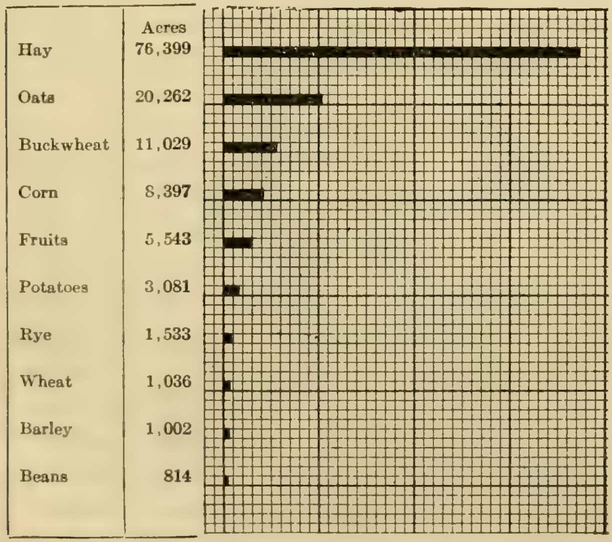


FIG. 141.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN SCHOHARIE COUNTY

SCHUYLER COUNTY

Schuyler County is located in the west central part of the state at the head of Seneca Lake. It has an area of 215,040 acres. From north to south its extent varies from 12 to 18 miles; from east to west it extends approximately 22 miles. The population is shown in the following table:

POPULATION BY TOWNS

(Census of 1915)

Catherine	1,192	Reading	1,385
Cayuta	346	Tyrone	1,257
Dix*	3,568		
Hector	3,548	Total	13,954
Montour	1,676		
Orange	982		

---

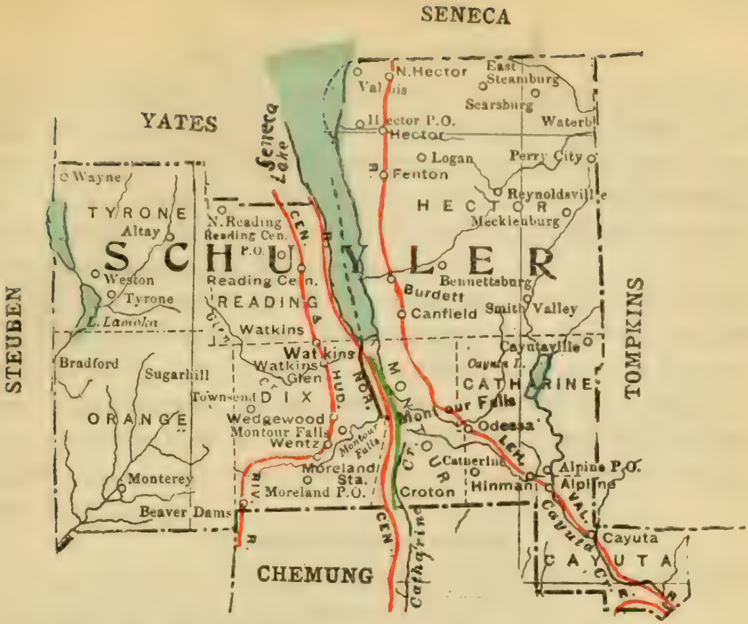
* Watkins, in the town of Dix, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Steuben, Chenango, and Tompkins in 1854, and named from General Philip Schuyler, the Revolutionary leader and patriot. In 1779, when General Sullivan made his raid into western New York for the purpose of punishing the Indians, there were within the limits of Schuyler County several towns and villages laid out with considerable regularity. Some of the Indians were living in painted frame houses with chimneys. They had large fields of corn and beans and extensive orchards of apples, pears, and peaches. So numerous were the fruit trees, that one orchard alone contained 1,500 trees.

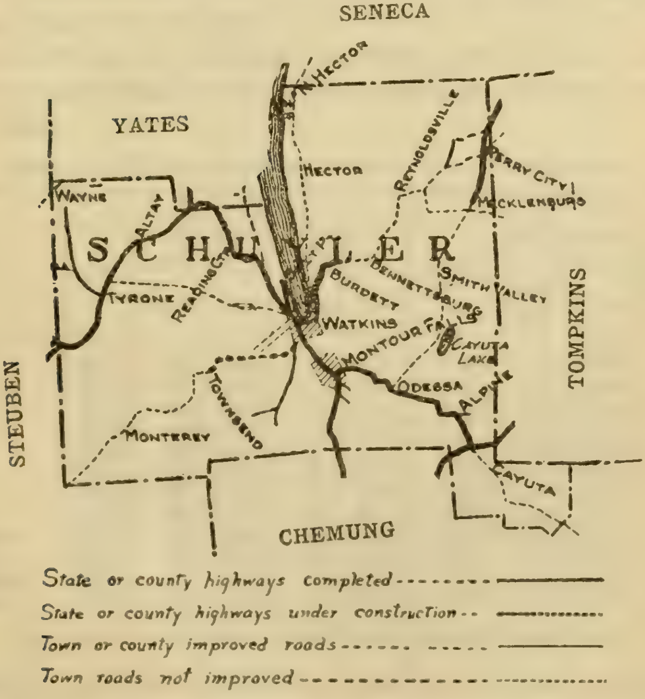
When peace was concluded many settlements were made by soldiers who had belonged to the army. The first settlements in the county were made on Catharine's Creek near the present site of Havana in 1788, and on the shores of Seneca Lake in 1790.

Mary Jemison, the celebrated "white woman" of the Genesee, who was adopted by the Indians when a child, lived for a time in a village at the head of Seneca Lake. Another woman prominent in the early history of Schuyler County was Catharine Montour, a French woman who married an Indian and was adopted into the Seneca tribe. She resided on the present site of Havana and was know as Queen Catharine. For many years she received a small salary from the English colonial government because of her influence among the Indians.


SENECA
YATES
STEUBEN
TOMPKINS
CHEMUNG
SCHUYLER
Seneca Lake
N. Hector
Valois
East Steamburg
Searsburg
Waterburg
Hector P.O.
Hector
Logan
Perry City
Fenton
HECTOR
Reynoldsville
Mecklenburg
Wayne
TYRONE
Altay
N. Reading
Reading Cen. P.O.
Weston
Tyrone
L. Lamoka
Reading Cen.
READING
Watkins
Bennettsburg
Burdett
Canfield
Smith Valley
Cayutaville
Cayuta L.
CATHARINE
Bradford
Sugarhill
ORANGE
Watkins Glen
Townsend
DIX
Wedgewood
Montour Falls
Wentz
Moreland Sta.
Moreland P.O.
Monterey
Beaver Dams
MONTOUR
Odessa
Catharine
Croton
Hinman
Alpine P.O.
Alpine
Cayuta
CAYUTA
Catharine Cr.
CEN.
HUD.
NOR.
CEN.
LEH. VAL.

Map of Schuyler County, Showing Townships

Red, railroads; green, electric roads


SENECA
YATES
STEUBEN
TOMPKINS
CHEMUNG
SCHUYLER
N. Hector
Hector
Reynoldsville
Perry City
Mecklenburg
Wayne
Altay
Tyrone
Reading C.
Burdett
Bennettsburg
Smith Valley
Watkins
Montour Falls
Cayuta Lake
Odessa
Alpine
Townsend
Monterey
Cayuta
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

DEVELOPMENT OF INDUSTRY

The agriculture of Schuyler County is of a general nature, with hay, oats, beans, and buckwheat as the principal crops. The principal animal industries are dairying and the raising of sheep and swine. Fruit is extensively raised in sections bordering Seneca Lake. The well-known Milen's Grape Juice is manufactured at Watkins in the town of Dix.

Aside from agriculture the manufacture of salt is one of the most important industries. The Watkins Salt Company on the east side of the lake produces about 200 tons, and the International Salt Company, on the west side, about 400 tons daily.

At Montour Falls in the town of Dix is located the Shepard Electric Crane and Hoist Manufacturing Plant, which employs about 1,200 people.

CLIMATE AND RAINFALL

Climatological records for Schuyler County are taken from the Wedgewood station, at an elevation of 1,440 feet.

The average dates of the last killing frost in spring and the first in fall are May 10 and October 6, respectively, giving a growing season of 149 days.

The following table summarizes records made by O. F. Corwin since the establishing of the station in 1889, and covering a period of 27 years.

RECORD OF TEMPERATURE AND PRECIPITATION AT WEDGEWOOD

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	23.2	67	1906	—16	1914	2.65	1.50	1915	14.5
February	21.8	62	1906	—17	1896	2.37	1.97	1896	16.7
March	31.1	83	1895	—7	1916	2.76	2.00	1900	13.6
April	43.9	87	1915*	12	1909*	3.07	2.20	1910	5.9
May	55.8	93	1911	23	1903	3.63	1.85	1893	3.1
June	65.2	96	1899	33	1913	3.80	3.45	1896	......
July	69.9	101	1911	43	1898*	3.80	2.54	1902	......
August	67.7	103	1916	41	1907	4.26	4.30	1903	......
September	61.8	99	1900	29	1894	2.89	5.34	1890	......
October	49.4	91	1891	18	1893	3.31	2.90	1896	4.0
November	38.4	73	1909	6	1905	2.39	2.52	1900	5.5
December	27.7	66	1911	—8	1894	2.60	2.95	1901	13.9
Year	46.1	103	1916	—17	1896	37.49	5.43	1890	72.2

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is mostly an undulating and hilly upland divided into two distinct ridges by the deep valley of Seneca Lake and its inlet. The highest summits are 600 to 1,000 feet above the lake and 1,200 to 1,600 feet above tide. A bluff 100 to 300 feet high, too steep for profitable cultivation, extends along the shores of the lake. Farther inland the hills are bordered by long gradual slopes, arable to their summits. The extreme southern part of the county assumes a more hilly and broken character.

Catherine's Creek, which flows into the head of Seneca Lake, is the principal stream. Its valley is deep, narrow, and winding, and is bordered by steep hillsides 400 to 600 feet high. Along the course are numerous falls, while near the mouth is a marshy region of considerable extent. Meads Run, a tributary of Chemung River, drains the southwest corner, and Cayuta Creek the southeast corner.

The soil on the highlands is clay and gravel, principally derived from the disintegration of the shales. In many places this is underlaid by hardpan. In the valleys the soil is a gravelly loam intermixed with alluvium.

DESCRIPTION BY TOWNSHIPS

CATHERINE: The surface is a hilly upland, broken by the deep valleys of the streams. Cranberry Creek flows through a deep ravine along the northwestern border. Cayuta Lake lies in the northeastern part and its outlet, Cayuta Creek, flows south into the Susquehanna. The soil is principally a gravelly loam mixed with clay.

Products: Hay, beans, buckwheat, dairy products, corn and sheep.

The average value of farm land is $50 an acre.

CAYUTA: The surface is a hilly upland. Cayuta Creek flows southeast through the town in a narrow valley bordered by steep hillsides. The soil is a clayey and gravelly loam.

Products: Dairy products and hay.

Average values of farm land range from $25 to $40 an acre.

DIX: The surface is mostly a rolling and hilly upland, the summits being 700 to 1,600 feet above sea level. A little

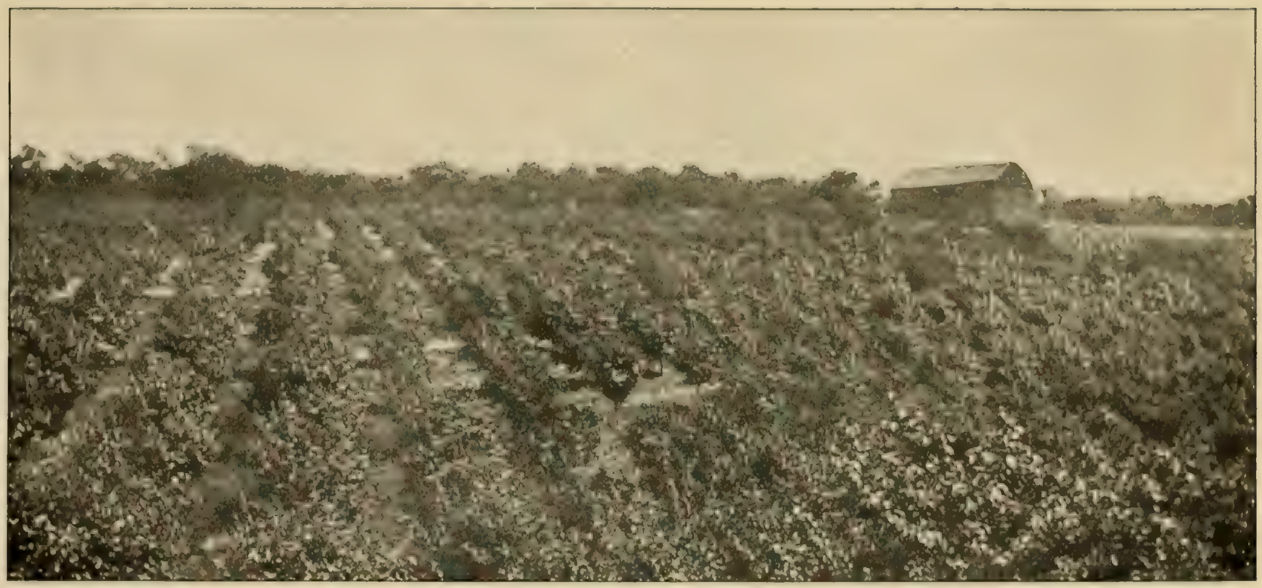


Fig. 142.— Peach and Plum Orchard in the Town of Hector. Grapes May be Seen in Background at Right

southwest from the head of the lake lies Watkins Glen, through which runs a small stream forming a beautiful series of cascades. The soil is principally a fine quality of gravelly loam. One of the Wilde milk-receiving stations is located at Watkins and a cooperative cheese factory is operated at Townsend.

Products: Beans, hay, buckwheat, dairy products and potatoes.

Average values of farm land range from $40 to $60 an acre.

HECTOR: The surface is a rolling upland, the highest summits being 600 to 1,800 feet above sea level. The bluffs bordering the lake are 100 to 300 feet high and nearly perpendicular. The town is drained by a large number of small creeks flowing into Seneca and Cayuga lakes. The soil is a clayey, sandy, and gravelly loam, in some places underlaid by hardpan.

Products: Hay, oats, peaches, grapes, dairy products, sheep, beans, apples and plums.

Average values of farm land range from $50 to $60 an acre.

MONTOUR: The surface is broken by abrupt hills which, on its western and eastern borders, rise to a height of several hundred feet. Catherine Creek flows through the western part of the town. The soil is a fertile gravelly loam mixed with clay.

Products: Hay, beans, buckwheat, dairy products, corn and sheep.

Average values of farm land range from $45 to $55 an acre.

ORANGE: The surface is a rolling and hilly upland, broken by deep, irregular valleys of the streams. Meads Creek, flowing southwest, forms the principal drainage. The soil is chiefly a gravelly loam.

Products: Hay, dairy products, oats, potatoes, and beans.

Average values of farm land range from $25 to $30 an acre.

READING: The surface is a rolling upland 800 to 1,700 feet above sea level. The bluffs on the shore are very steep, often precipitous. Seneca Lake forms the eastern boundary. The streams are small brooks and creeks. The soil is mostly a clayey loam.

Products: Hay, oats, corn, barley, buckwheat, beans and sheep.

Average values of farm land range from $50 to $70 an acre.

TYRONE: The surface is an elevated upland divided into several ridges by the valleys of the streams. Little Lake, which is about three miles long, lies on the west border, and Lamoka Lake, about half the size, is on the southwest corner. Both of these lakes lie in deep valleys and are bordered by steep hills rising 400 to 600 feet above them. The soil is a clayey loam.

Products: Hay, oats, dairy products, and fruit, especially apples, berries and grapes.

Average values of farm land range from $40 to $50 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Three lines of railroad — the Lehigh Valley, the Northern Central, and the New York Central and Hudson River — extend from north to south through the center of the county. Of these three the first passes east of Seneca Lake, and the two last mentioned on the west side.

Electric Roads and Waterways

An electric road runs south from Watkins through Schuyler and Chemung counties to Elmira. In summer an active shipping trade is carried on over Seneca Lake.

Improved Highways

The improved highway that extends through Watkins makes connections with roads leading in all directions. Sections from Ithaca and Elmira converge at Montour Falls and lead northwest through Watkins. On the northwest border of the county this road also divides — one section extending north through Penn Yan and Geneva, and the other southwest to Savona, Steuben County. A short road runs northeast from Watkins to Burdett. An improved concrete road is under construction on the east side of Seneca Lake from Burdett to Lodi. Another section leads from Mecklenburg northeast to Trumansburg, Tompkins County, and makes connections for points in various directions.

There are in the county 35 miles of completed improved highways, with 18 miles additional under construction.

AVAILABLE MARKETS

Within the county the greatest amount of farm produce is sold at Mecklenburg and Burdett. Outside the county both New York and Philadelphia are important markets for potatoes, fruit, and hay. The milk produced is sold largely as market milk.

The agricultural organizations are as follows:

Granges: Pomona and fifteen subordinate granges.
Hector Fruit Growers' Association, Inc.
Schuyler County Agricultural Conference Board.
Schuyler County Agricultural Society.
Schuyler County Dairymen's League.
Schuyler County Farm Bureau Association.
Schuyler County Sheep Breeders' Cooperative Association, Inc.
Townsend Cheese Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Burdett, Montour Falls, Odessa, and Watkins.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	190,032 acres
Number of farms	1,920
Per cent of farm land improved	79.2

LIVE STOCK PRODUCTS

Milk sold	297,485 gal.
Cream sold	6,439 gal.
Butter fat sold	103,820 lbs.
Butter produced	641,743 lbs.
Eggs produced	605,807 doz.
Wool produced	15,881 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	5,392
Cattle	10,127
Sheep	22,982
Swine	5,401
Poultry	88,114

BEES

Number of colonies	1,929

SELECTED CROPS

Cereals:	Acres	Yield
Corn	5,031	134,500 bu.
Oats	15,531	291,237 bu.
Wheat	4,008	83,906 bu.
Barley	1,968	30,259 bu.
Buckwheat	10,363	191,063 bu.
Rye	1,882	28,024 bu.
Hay and forage	43,338	44,344 tons
Special Crops:		
Potatoes	3,045	365,815 bu.
Vegetables, other than potatoes	376	....
Dry edible beans	1,414	15,237 bu.
Dry peas	6	62. bu.
Fruits:		
Apples	90,567 trees	108,352 bu.
Peaches and nectarines	51,993 trees	24,706 bu.
Pears	5,888 trees	4,359 bu.
Plums and prunes	18,301 trees	12,148 bu.
Cherries	6,525 trees	3,705 bu.
Quinces	232 trees	132 bu.
Grapes	923,263 vines	5,253,621 lbs.
Small fruits	701 acres	619,209 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,877	1,486

LIVE STOCK AND POULTRY

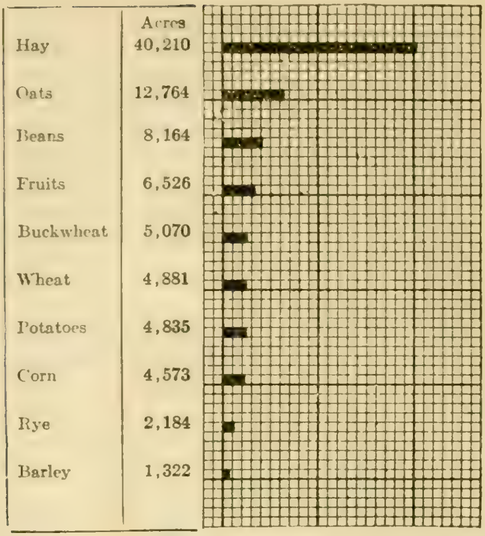
	1917 Number	1918 Number
Horses and mules	4,855	4,594
Cattle	9,670	9,519
Sheep	17,105	14,395
Swine	3,244	2,717
Poultry	94,254	88,403

BEES

	1917 Number	1918 Number
Number of colonies	704	894

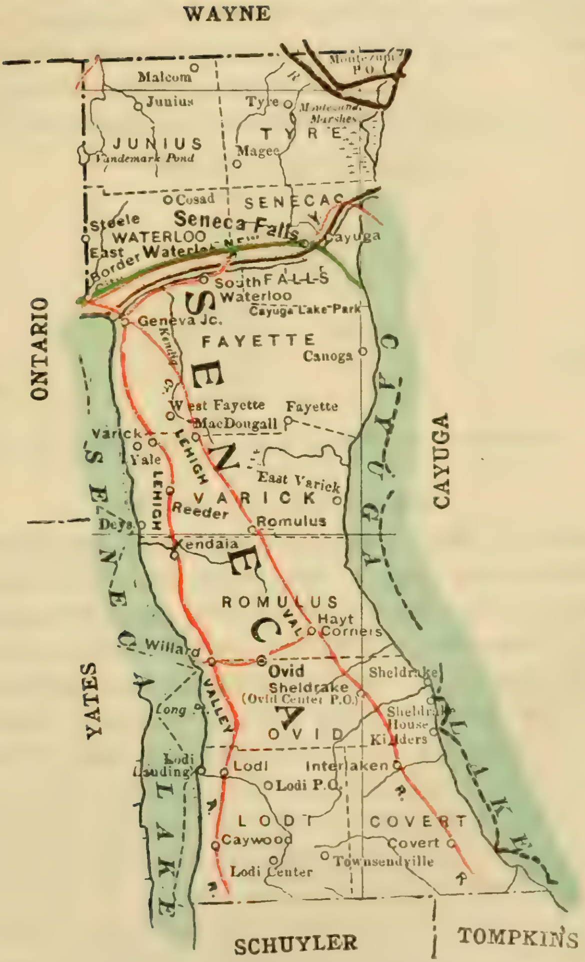
SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	3,021	2,492	45,679 bu.
Oats	10,712	12,764	296,426 bu.
Barley	1,794	1,322	26,301 bu.
Buckwheat	5,577	5,070	77,616 bu.
Wheat (winter)	4,400	4,724	81,451 bu.
Wheat (spring)	63	157	1,795 bu.
Rye	1,686	2,184	30,773 bu.
Hay and Forage:			
Alfalfa	761	689	2,234 tons
Other hay	42,723	39,521	45,946 tons
Corn (ensilage)	1,230	891	5,044 tons
Corn (fodder)	....	1,190	....
Special Crops:			
Field beans	6,534	8,164	59,650 bu.
Cabbage	22	62	1,621 tons
Potatoes	1,835	4,835	145,089 bu.
Roots raised for stock food	....	80	....
Canning factory crops	43	30	....
Other vegetables and garden crops	250	339	....
Fruits:			
Apples	2,677	2,764	92,488 bu.
Peaches	770	1,157	13,433 bu.
Pears	70	189	2,018 bu.
Plums	78	88	16,670 lbs.
Cherries	122	68	19,290 lbs.
Quinces	....	12	10 bu.
Vineyard	1,900	1,746	2,942,406 lbs.
Small fruits	328	502	....



	Acres
Hay	40,210
Oats	12,764
Beans	8,164
Fruits	6,526
Buckwheat	5,070
Wheat	4,881
Potatoes	4,835
Corn	4,573
Rye	2,184
Barley	1,322

FIG. 143.— CHART SHOWING RELATIVE ACREAGE IN SCHUYLER COUNTY


WAYNE
Malcom
Junius
JUNIUS
Vandemark Pond
Tyre
Montezuma Marshes
TYRE
Magee
Cosad
SENECA
Seneca Falls
Steele
WATERLOO
East Waterloo
Border City
Cayuga
South
FALLS
Waterloo
Cayuga Lake Park
Geneva Jc.
FAYETTE
Canoga
ONTARIO
Kendig Cr.
West Fayette
Fayette
MacDougall
Varick
Yale
LEHIGH
East Varick
VARICK
Reeder
Romulus
Deys
Kendaia
ROMULUS
Hayt Corners
VALLEY
Willard
Ovid
Sheldrake (Ovid Center P.O.)
Sheldrake
Sheldrake House
Kidders
OVID
Long Pt.
Lodi Landing
Lodi
Interlaken
Lodi P.O.
LODI
COVERT
Caywood
Covert
Townsendville
Lodi Center
SENECA
CAYUGA LAKE
CAYUGA
SENECA LAKE
YATES
SCHUYLER
TOMPKINS

Map of Seneca County, Showing Townships
Red, railroads; green, electric roads; brown, canals

SENECA COUNTY

This county lies in the west central part of the state and is bounded on either side by Seneca and Cayuga lakes. It has an area of 215,040 acres. Its average length from north to south is 33 miles, and from east to west 10 miles.

In 1915 the population was distributed as follows:

Population by Townships

(Census of 1915)

Covert	1,863	Tyre	895
Fayette	2,640	Varick	1,273
Junius	942	Waterloo*	4,764
Lodi	1,399		
Ovid	1,744	Total	25,249
Romulus	2,098		
Seneca Falls	7,631		

---

* Waterloo, the county seat, is located in the town of Waterloo.

HISTORICAL ASSOCIATIONS

This county was formed from Cayuga in 1804. Portions were later added to Tompkins and Wayne. Seneca preserves the name of the Indian tribe that occupied the western portion of the state from Geneva to Buffalo, and was farthest advanced in civilization. Credit for this progress is no doubt due in part to the Reverend Samuel Kirkland and the Jesuit Fathers, who labored among the Indians as missionaries. The great councils of the Iroquois were held within the present limits of Seneca County.

The country was first brought to the notice of the whites through the expedition of Sullivan, who passed along the banks of Seneca Lake in 1779. While the first settlers came from Pennsylvania, locating in the southern part, many of the early inhabitants were soldiers who had drawn their portion of public land in this section.

After 1790 settlement progressed rapidly. At that time the state road known as the "Geneva Road" was built, and this soon became the great highway for immigration.

DEVELOPMENT OF INDUSTRY

Once a clearing was made, the settlers planted their various crops of corn, wheat, rye, pumpkins, turnips, and potatoes. There being but little frost, potatoes were often dug as they were needed for use, those remaining in the ground in spring being dug at that time.

Because of the absence of transportation in early days prices were low. In 1816 a bushel of wheat could be sold in the town of Seneca for two shillings and sixpence, ashes being at that time the only article of production profitable for sale.

Apple trees were grown by the Indians in their clearings, and wild plums, often of excellent flavor, were common. With the exception of apples and pears, the settlers soon supplied themselves with fruit, peaches being especially abundant. In these days fruit has come to receive general attention. Flax, which was once extensively produced, having been found to be exhaustive to the land, is no longer raised. Sheep raising was begun in about 1800.

Seneca County might be termed a hay- and grain-farming section. More than 3,000 cars of hay were shipped from stations in Seneca County during the year 1918. Most of the soil is well adapted to the production of hay and grain, clover often coming in without seeding. In sections where intensive farming is carried on, considerable clover seed, especially alsike, is raised. As a result of grain being so largely produced, poultry interests assume considerable importance.

The county has an excellent reputation for growing well-colored fruit, particularly apples. Northern Spy, McIntosh, Hubbardston, Baldwin, and Greening varieties do especially well.

The production of fruit trees is an extensive occupation in the vicinity of Geneva.

The grape industry, which has been very prominent in the past, has become relatively unimportant.

One of the largest manufacturing interests is the manufacture of pumps at Seneca Falls.

CLIMATE AND RAINFALL

Climatological records for Seneca County have been taken at Romulus by J. H. Coryell. The location of the station is about 1,000 feet west of the principal corner at Romulus, which is situated on nearly level ground, there being only a gentle slope toward Cayuga Lake on the east and Seneca Lake on the west.

Average dates for the last killing frost in spring and the first in fall are May 7 and October 10, respectively, giving a growing season of 156 days.

The following records, which cover a period of 24 years, show both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT ROMULUS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	25.0	70	1906	—15	1896	2.23	1.73	1913	11.6
February.....	23.5	65	1906	—17	1914*	1.83	2.31	1900	11.9
March........	33.3	84	1905	—4	1900	2.41	2.56	1913	10.1
April.........	45.4	87	1896	17	1912*	2.58	1.62	1907	4.5
May.........	57.7	93	1895	25	1902	3.50	2.02	1893	0.2
June.........	66.4	96	1893	35	1913	3.30	2.62	1906	......
July..........	71.2	98	1894	41	1898	3.22	2.31	1895	......
August.......	69.0	97	1900*	42	1913	3.14	1.73	1908	......
September....	62.8	97	1897	32	1913*	2.45	2.43	1913	......
October.......	51.3	88	1891	21	1904	2.95	2.48	1891	0.3
November....	39.4	74	1902	11	1905	2.16	2.25	1900	3.3
December.....	29.2	65	1901	—8	1914	2.12	2.00	1894	11.2
Year.........	47.8	98	1894	—17	1914*	31.89	2.62	1906	53.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

A high ridge enters the county from Tompkins, and occupies nearly one-fourth of its surface. The extreme southern portion of this ridge rises 700 to 800 feet above Seneca Lake and generally terminates in high bluffs on the shores of the lakes. At the foot of Seneca Lake the bluffs have an average height of 20 feet, rising gradually toward the south to an elevation of 100 to 150 feet. At the foot of Cayuga Lake the shore is low and shelving; but in Romulus the shores rise in bluffs which gradually increase in height to an elevation of 150 to 200 feet in the south. The land generally rises from the bluffs in smooth, gradual slopes toward the central summit of the ridge, although in a few places it is broken by a terrace-like formation.

The principal stream is Seneca River, forming the outlet of Seneca Lake. In its course of about fourteen miles between Seneca and Cayuga lakes it falls sixty feet. The falls are principally at Waterloo and Seneca Falls. Clyde River, a tributary of Seneca, flows through a portion of the marshy region in the northeast.

The soil is generally of excellent quality. In the northwest corner of the county are several alluvial ridges covered with sandy and gravelly loam, well adapted either to grazing or to the production of grain. The marshy region that lies in the northeast corner is covered with thick deposits of marl and muck. The lowlands bordering the Seneca River are largely clayey, in many places mixed with disintegrated gypsum and limestone. Gypsum is quarried in this locality. South of the river in a belt of country two or three miles wide are masses of the corniferous limestone, which furnishes an excellent building material.

DESCRIPTION BY TOWNSHIPS

COVERT: The surface is an upland descending from the western border and terminating in a steep bluff on the shore of the lake. On the shore this bluff rises 100 to 200 feet above the water, and the summit of the slope is about 600 feet higher.

The town is watered by Boardman Creek and many smaller streams flowing into Cayuga Lake. These streams have worn ravines in the slate and shales to the depth of 20 to 40 feet.

The soil is a gravelly and clayey loam. With the exception of the steep sides of the lake bluffs the entire surface is arable.

Products: Hay, oats, wheat, corn, apples, buckwheat and barley.

Average values of farm land range from $50 to $100 per acre.

FAYETTE: The surface is rolling and inclined toward the north. On Cayuga Lake the shores are lower than those on Seneca Lake, being somewhat marshy in places.

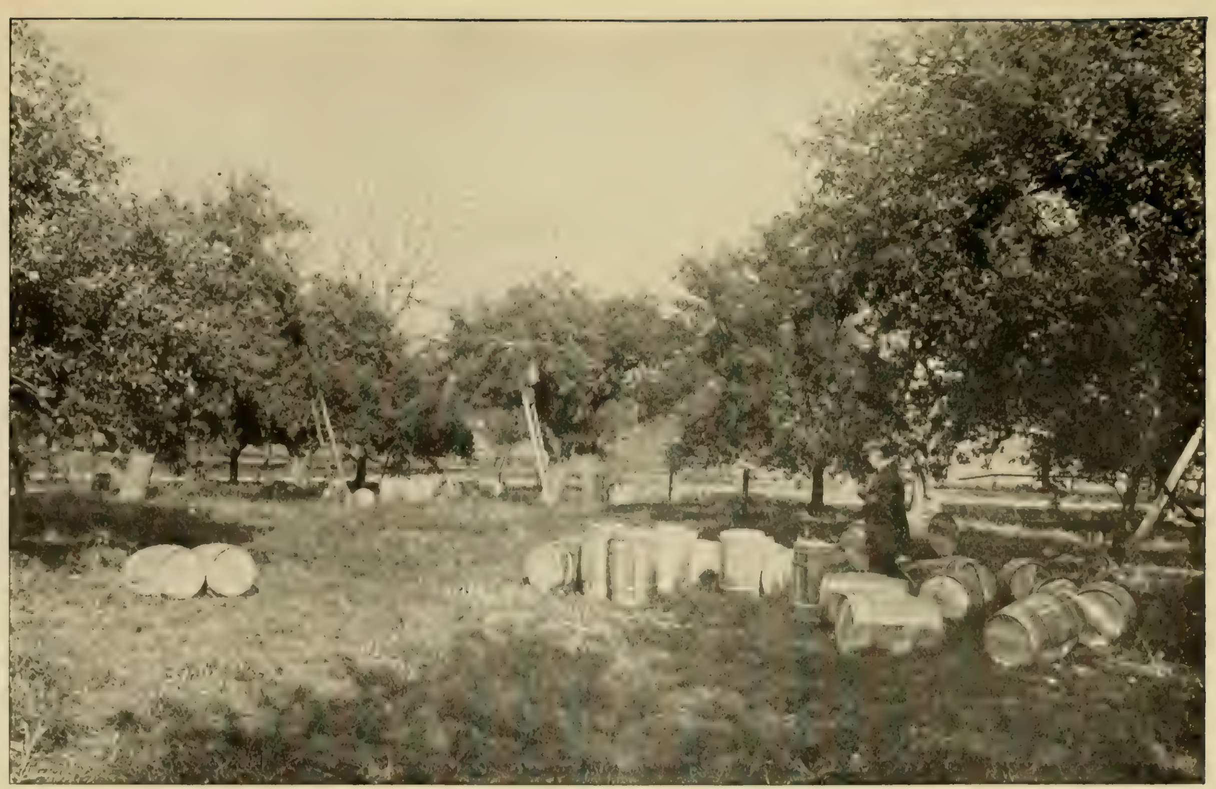


FIG. 144.—A SENECA COUNTY ORCHARD

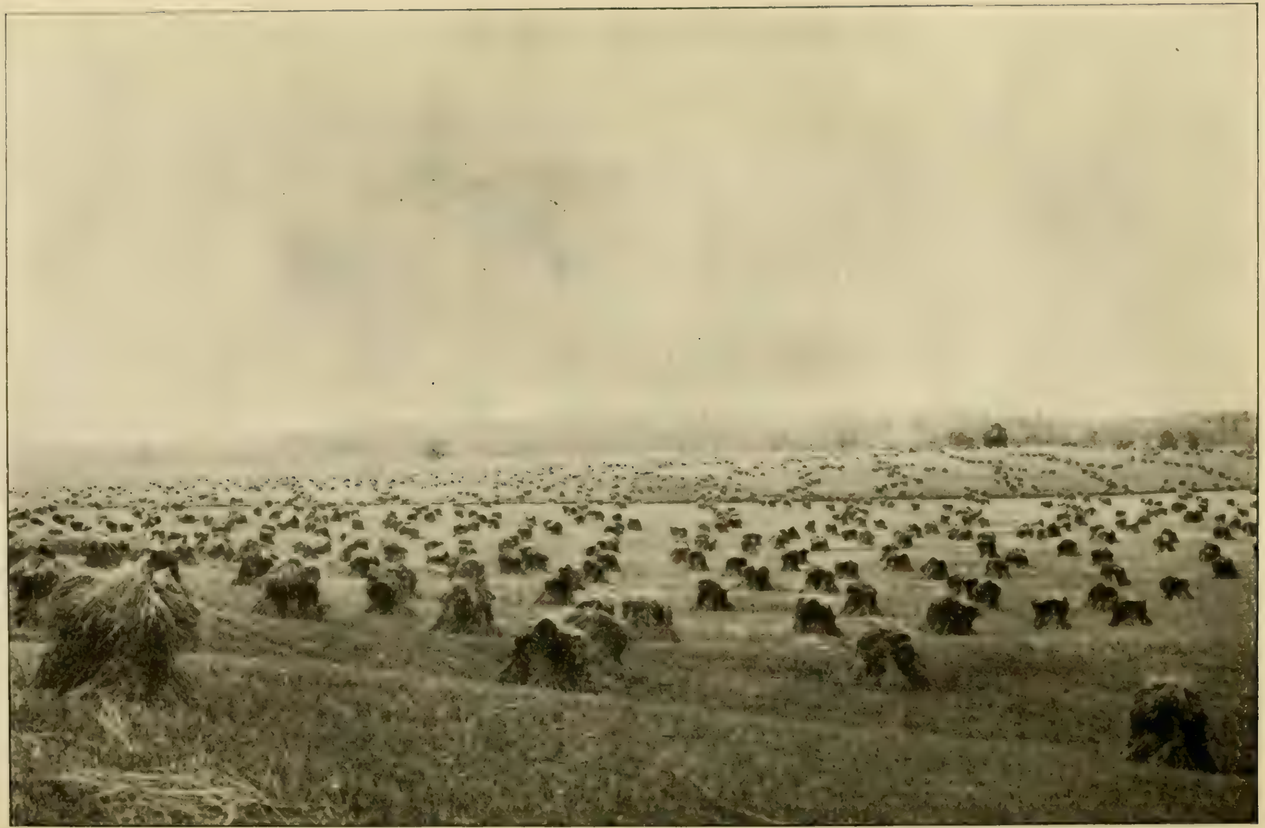


Fig. 145.- One of the Wheat Fields of Seneca County

The principal streams are Kendig Creek and Sucker Brook.

The soil is a deep rich loam composed of clay, gravel, and sand.

Products: Hay, oats, wheat, barley, buckwheat and corn.

Average values of farm land range from $50 to $100 per acre, and in the northwestern part as high as $200.

JUNIUS: Numerous small isolated gravel and clay ridges 30 to 75 feet high, extending in a general north and south direction, occupy a great portion of this town. The numerous small streams flow north into the Clyde River.

The soil is a good quality of gravelly loam.

Products: Oats, wheat, apples, potatoes, corn and cabbage.

Average values of farm land range from $25 to $100 per acre.

LODI: The surface is mostly inclined toward the west and north. The bluff bordering on Seneca Lake is 150 to 250 feet above the water; the highest part of the central ridge is 500 feet higher and about 1,400 feet above tide.

Mill Creek in the center and Sheldrake Creek in the northeast corner are the principal streams.

The soil is principally a gravelly loam mixed with disintegrated rock.

Products: Hay, oats, wheat, grapes, peaches, buckwheat and corn.

Average values of farm land range from $50 to $100 per acre.

OVID: The surface consists of an arable ridge 900 feet above tide, descending west of the center toward Seneca Lake. The buffs on the lake are 20 to 50 feet high and nearly perpendicular. A great number of small streams flow into Cayuga and Seneca lakes, all of which have worn deep ravines in the shales. The soil is principally clay and gravel, intermixed with sand and disintegrated rocks.

In this town is located the Willard State Hospital.

Products: Hay, oats, wheat, barley, buckwheat and corn.

Average values of farm land range from $50 to $100 per acre.

ROMULUS: The surface is rolling or moderately hilly, and has a general northerly inclination. The high bluff from Ovid extends into the southern border of the town where it drops down abruptly about 200 feet. The land slopes from the center downward to the east and west, and is nearly all arable. The streams are small and flow generally in deep channels. The soil is a fertile gravelly and clayey loam.

The McGrane Thresher Works at Romulus are of considerable local importance.

Products: Hay, oats, wheat, barley, buckwheat, and corn.
Average values of farm land range from $50 to $100 per acre.

SENECA FALLS: The surface is nearly flat, elevated about 75 feet above Cayuga Lake. The shores of the lake are low and shelving, and the northern portion is swampy. Seneca River flows east and north through the center of the town over a series of ledges.

The soil is a stiff hard clay in the south and east; a sandy loam in the northwest, and a heavy vegetable muck in the northeast.

Products: Wheat, hay, oats, apples, buckwheat and barley.
Average values of farm land range from $25 to $200 per acre.

TYRE: The east half is a swamp, while the west half is occupied by peculiar drift ridges similar to those in Junius.

The soil is clay and muck in the east and a gravelly loam in the west.

Products: Wheat, hay, oats, apples, buckwheat and barley.
Average values of farm land range from $50 to $100 per acre.

VARICK: The surface is slightly inclined toward the north. The slopes of the ridges are so gradual that nearly every part is arable. Reeder Creek is the largest of the small streams draining this town. The soil is gravelly loam intermixed with clay.

Products: Hay, oats, wheat, barley, buckwheat and corn.
Average values of farm land range from $50 to $100 per acre.

WATERLOO: The surface is almost an unbroken flat. A marsh extends through the town south of the center and another occupies the northeast corner. Seneca River flows through the town. The soil is muck and clay in the north and east, gravelly along the northern border, and a sandy loam in the center and west.

Products: Potatoes, truck crops, apples, hay and oats.
Average values of farm land range from $25 to $200 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The towns of Waterloo and Seneca Falls are crossed by the New York Central line passing through Auburn and Geneva, and connecting with other points in all directions.

South of this line the county is served by the Lehigh Valley Railroad. One line extends across the county a short distance from the New York Central and almost parallel to that line. At Geneva Junction it divides into two branches, one extending south into Schuyler County and the other southeast into Tompkins. These two branches, which finally join and turn south into Pennsylvania, are connected by a short line near the boundary between the towns of Romulus and Ovid.

The western parts of the towns of Junius and Waterloo are within easy reach of the New York Central line leading north from Geneva to Lyons. This line is just within the border of Ontario County, and crosses the extreme northwest corner of Junius.

An electric road runs from Cayuga Lake Park to Seneca Falls, from which place it closely follows the New York Central tracks west to Geneva.

Improved Highways

The state highway between Albany and Buffalo passes through Seneca Falls and Waterloo. From each of the two latter points an improved highway runs south, the two roads finally converging at a point in the town of Romulus, and continuing south to Lodi and east to Interlaken, thence southeast to Ithaca.

The total completed state and county roads equal 61 miles; 7 miles in addition are under construction.

AVAILABLE MARKETS

Geneva, which is the largest local market, is the center of an extensive nursery business for the raising of fruit trees. Seneca Falls and Waterloo are also excellent local markets.

At Seneca Falls is located the Gould Manufacturing Co., which is the largest pump manufacturing establishment in the world.

The milk produced in the county is sold as market milk, principally in the cities of Geneva, Seneca Falls, Auburn, and Rochester.

Within the county are two canning factories.

The agricultural organizations are as follows:

Granges: Pomona and thirteen subordinate granges.
Seneca County Agricultural Society.
Seneca County Beekeepers' Society.
Seneca County Dairymen's League.
Seneca County Farm Bureau Association.
Seneca County Hay Growers' Cooperative Association, Inc.
Seneca County Jersey Cattle Club.
Seneca County National Farm Loan Association.
Seneca County Sheep Growers' Cooperative Association, Inc.

EDUCATIONAL FACILITIES

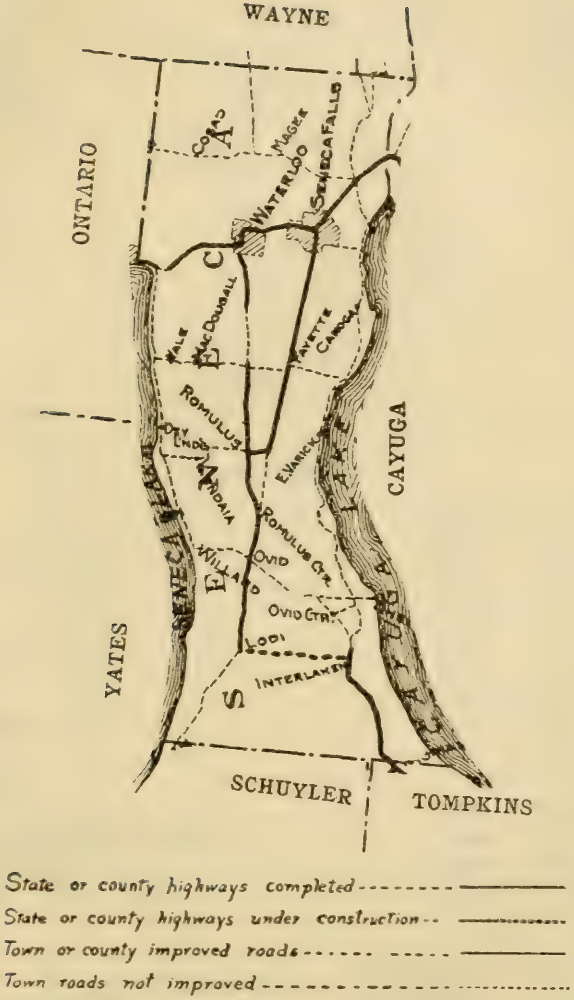
Approved courses in agriculture and home making are given at Interlaken.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Interlaken, Lodi, Seneca Falls, Ovid, and Waterloo.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	191,105 acres
Number of farms	2,085
Per cent of farm land improved	87.2


WAYNE
ONTARIO
CAYUGA
YATES
SCHUYLER
TOMPKINS
SENECA
WATERLOO
SENECA FALLS
MAGEE
MACDOUGALL
FAYETTE
CANOGA
ROMULUS
DEY LNDG
E. VARICK
KENDAIA
ROMULUS CTR
OVID
WILLARD
OVID CTR
LODI
INTERLAKEN
SENECA LAKE
CAYUGA LAKE
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

LIVE STOCK PRODUCTS

Milk sold	707, 392 gal.
Cream sold	9, 524 gal.
Butter fat sold	144, 478 lbs.
Butter produced	565, 500 lbs.
Cheese produced	2, 639 lbs.
Eggs produced	837, 298 doz.
Wool produced	9, 149 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	7, 879
Cattle	12, 649
Sheep	15, 314
Swine	9, 832
Poultry	128, 791

BEES

Number of colonies	3, 084

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	10, 954	334, 218 bu.
Oats	21, 879	649, 066 bu.
Wheat	13, 495	331, 822 bu.
Barley	2, 358	55, 574 bu.
Buckwheat	5, 085	117, 495 bu.
Rye	1, 189	22, 467 bu.
Hay and forage	47, 971	59, 724 tons
Special crops:		
Potatoes	2, 833	290, 310 bu.
Vegetables, other than potatoes	1, 440	....
Dry edible beans	2, 221	23, 589 bu.
Dry peas	20	274 bu.
Fruits:		
Apples	123, 437 trees	276, 604 bu.
Peaches and nectarines	81, 440 trees	61, 279 bu.
Pears	29, 468 trees	23, 066 bu.
Plums and prunes	33, 190 trees	26, 895 bu.
Cherries	27, 063 trees	8, 952 bu.
Quinces	1, 391 trees	554 bu.
Grapes	561, 869 vines	6, 157, 171 lbs.
Small fruits	71 acres	121, 510 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,830	1,717
LIVE STOCK AND POULTRY		
Horses and mules	6,291	5,898
Cattle	9,371	9,566
Sheep	8,752	7,007
Swine	5,997	5,108
Poultry	110,043	93,838
BEES		
Number of colonies	2,551	3,127

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	7,189	6,967	106,959 bu.
Oats	11,569	14,789	462,580 bu.
Barley	5,598	3,553	77,199 bu.
Buckwheat	5,549	3,790	88,346 bu.
Wheat (winter)	13,518	17,065	385,066 bu.
Wheat (spring)	106	229	5,264 bu.
Rye	901	1,038	16,119 bu.
Hay and forage:			
Alfalfa	1,815	1,643	3,799 tons
Other hay	40,721	35,209	50,033 tons
Corn (ensilage)	1,185	1,127	6,259 tons
Corn (fodder)	....	1,344	....
Special crops:			
Field beans	4,918	4,341	21,798 bu.
Cabbage	382	679	5,201 tons
Potatoes	1,578	2,067	112,382 bu.
Roots raised for stock food	....	142	....
Canning factory crops	718	701	....
Other vegetables and garden crops	342	492	....
Fruits:			
Apples	4,306	6,523	156,613 bu.
Peaches	1,121	1,228	20,323 bu.
Pears	457	494	16,550 bu.
Plums	103	172	57,359 lbs.
Cherries	245	310	61,294 lbs.
Quinces	....	12	104 bu.
Vineyard	1,059	1,290	975,721 lbs.
Small fruits	171	174	....

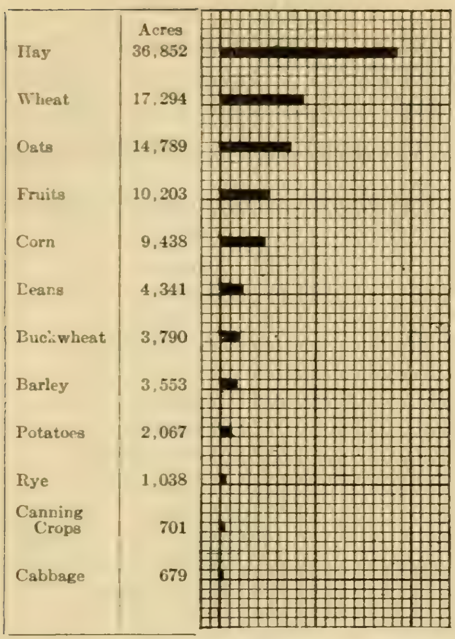


FIG. 146.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN SENECA COUNTY

STEUBEN COUNTY

This county lies on the southern boundary of the state southwest of the central lakes. It has an area of 896,640 acres. Its average extent from north to south is 40 miles and from east to west 40 miles. The population is distributed as follows:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Corning (city)	13,459
Hornell (city)	14,352
Addison	2,160
Avoca	2,108
Bath*	8,172
Bradford	629
Cameron	957
Campbell	1,106
Canisteo	3,394
Caton	1,053
Cohocton	3,103
Corning	2,580
Dansville	1,269
Erwin	2,469
Fremont	812
Greenwood	1,142
Hartsville	638
Hornby	842
Hornellsville	2,053
Howard	1,386
Jasper	1,253
Lindley	1,181
Prattsburg	1,798
Pulteney	1,335
Rathbone	869
Thurston	855
Troupsburgh	1,532
Tuscarora	955
Urbana	3,096
Wayland	3,099
Wayne	686
West Union	885
Wheeler	892
Woodhull	1,510
Total	83,630

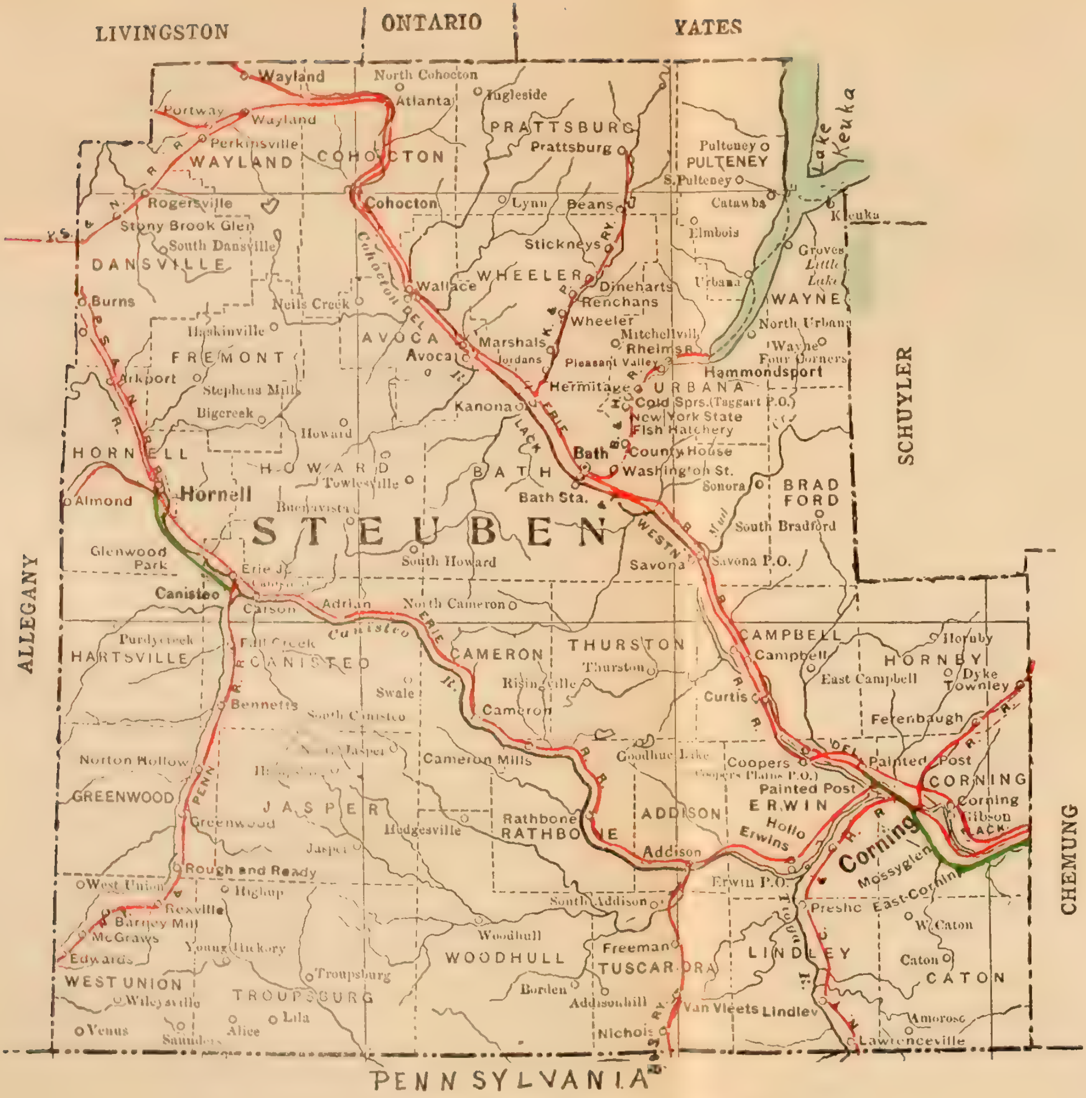
---

* Bath, in this town, is the county seat.

Note: Corning now has a population of 15,800; Hornell, 15,000.

HISTORICAL ASSOCIATIONS

The county was formed from Ontario in 1796 and named in honor of Baron Steuben, the efficient drillmaster who assisted Washington in building up his army. On the arrival of white men the county was occupied by the Seneca Indians. Within the limits of this county occurred the inception and gathering of the first invasion of the Wyoming country by Indians and tories. The result was Sullivan's march to the Genesee and the land of the Senecas, when the Indian villages on the sites of Corning and Painted Post were destroyed. Another Indian village once stood on the site of Canisteo. Catherinestown was named for the celebrated Catherine Montour, queen of the Senecas.


LIVINGSTON
ONTARIO
YATES
SCHUYLER
CHEMUNG
ALLEGANY
PENNSYLVANIA
STEUBEN
Lake Keuka
Wayland
Portway
Perkinsville
WAYLAND
North Cohocton
Atlanta
Ingleside
PRATTSBURG
Prattsburg
COHOCTON
Cohocton
Pulteney
PULTENEY
S. Pulteney
Catawba
Keuka
Rogersville
Stony Brook Glen
South Dansville
DANSVILLE
Lynn
Beans
Sticknays
Elmbois
Groves
Little Lake
Urbana
WAYNE
Wallace
WHEELER
Dineharts
Renchans
Wheeler
Burns
Neils Creek
Haskinville
FREMONT
Arkport
Stephens Mill
Bigcreek
Howard
AVOCA
Avoca
Marshals
Jordans
Mitchellville
Rheims
Pleasant Valley
Hammondsport
North Urbana
Wayne Four Corners
Hermitage
URBANA
Cold Sprs. (Taggart P.O.)
New York State Fish Hatchery
Kanona
HORNELL
Hornell
Almond
HOWARD
Towlesville
Buenavista
BATH
Bath
County House
Washington St.
Bath Sta.
Sonora
BRADFORD
South Bradford
Glenwood Park
Erie J.
Canisteo
Carson
Adrian
South Howard
North Cameron
Savona
Savona P.O.
Purdy creek
HARTSVILLE
Fall Creek
CANISTEO
Canisteo R.
Swale
CAMERON
THURSTON
Thurston
Risingville
CAMPBELL
Campbell
East Campbell
HORNBY
Hornby
Dyke
Townley
Bennetts
South Canisteo
Cameron
Curtis
Ferenbaugh
New Jasper
Cameron Mills
Goodhue Lake
Coopers
Coopers Plains P.O.
Painted Post
CORNING
Corning
Gibson
Norton Hollow
GREENWOOD
Greenwood
JASPER
Hedgesville
Rathbone
RATHBONE
ADDISON
ERWIN
Hollo
Erwins
Jasper
Addison
Mossyglen
Rough and Ready
West Union
Highup
Rexville
Barney Mill
McGraws
Edwards
Young Hickory
Woodhull
WOODHULL
South Addison
Erwin P.O.
Preshc
East Corning
W. Caton
Freeman
TUSCARORA
LINDLEY
Caton
CATON
Troupsburg
WEST UNION
Wileysville
TROUPSBURG
Borden
Addisonhill
Van Vleets
Lindley
Lila
Venus
Saunders
Alice
Nichols
Amorose
Lawrenceville
ERIE
DEL. LACK. & WESTN. R.R.
PENN. R.R.

MAP OF STEUBEN COUNTY SHOWING TOWNSHIPS.

Red, railroads; green, electric roads

In 1789 the first white settlement was made on the present site of Corning by a native of Vermont. This territory was a part of the Phelps and Gorham tract, and was later owned successively by Robert Morris, Charles Williamson, and Sir William Pulteney. To Captain Williamson is due the credit of extensive developments in the county. He improved the navigation of the Chemung, Cohocton, and Canisteo rivers, and built bridges, roads, hotels, jails, courthouses, churches, mills, schoolhouses, and theatres.

DEVELOPMENT OF INDUSTRY

As ashes were almost the only product that brought cash to the early settlers, much attention was given to burning timber. Saw mills were later erected, and extensive lumber business was begun. Previous to 1800, when mills of all descriptions were found on every considerable stream, saw mills, carding and cloth-dressing mills, distilleries, and tanneries were numerous.

When the land was cleared, crops of corn, wheat, and other grains were raised. The Canisteo River offered transportation to Baltimore, which was a ready market for surplus grain, butter, cheese, beef, pork, whisky, and shingles. About 1835 J. W. Prentiss planted grape cuttings in the town of Pulteney, with excellent success. This was the beginning of a very extensive grape business in the towns of Pulteney, Urbana, and Wayne, adjoining Lake Keuka.

The lumber business being so much more profitable, agricultural progress was slow until about 1850, when the pine timber had nearly all been removed from the land. Many of the lumbermen and rivermen were then attracted to the West, and a new class of people from the Mohawk valley and the eastern states, who were experienced farmers, bought the land. They introduced new methods, planted superior grain, and raised improved live stock. Considerable attention was given to the raising of young cattle and stock for the eastern markets. For about twenty years previous to 1900 Steuben County was one of the leading sheep-raising counties in New York State; swine and their products were of much importance for nearly a century. Both classes of animals are now greatly reduced in number.

Hay and market milk are prominent products, and poultry raising occupies a leading place. This county ranks second in production of oats and buckwheat. Besides these, potatoes, which are cultivated in all parts of the county, form a staple and valuable crop. Truck crops are largely raised in the vicinity of Corning, Hornell, Atlanta, and Wayland.

At Cohocton is a large mill engaged in producing buckwheat flour.

Manufactures within the county include silk and articles of glass and wood.

Hammondsport, in Urbana, was the seat of some of the earliest aerial experiments, and at present the Curtis plant at that place is almost entirely given over to aeroplane work.

CLIMATE AND RAINFALL

The meteorological records here given for Steuben County were taken at Addison at an elevation of 1,000 feet. The present observer is E. D. Crane.

Average dates for the last killing frost in spring and the first in fall are May 11 and October 6, respectively, giving a growing season of 148 days.

The following table, compiled from observations covering the period 1890 to 1916, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT ADDISON

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	25.4	71	1906	—35	1904	2.27	2.20	1915	11.2
February	24.1	68	1906	—26	1899	1.82	1.40	1896	10.5
March	33.7	85	1905	—22	1916	2.38	1.95	1900	9.3
April	46.2	89	1915	13	1909	2.78	2.12	1910	3.4
May	57.6	98	1911	21	1903	3.88	2.75	1893	0.1
June	65.9	99	1911	30	1913	3.71	2.61	1913	......
July	70.3	106	1911	37	1912	3.45	3.82	1908	......
August	68.0	102	1909	36	1907	3.55	3.66	1911	......
September	62.4	98	1913	24	1904	2.96	3.04	1890	......
October	50.7	92	1905	15	1904	2.91	3.30	1896	T.
November	39.3	78	1909	4	1904	1.87	2.32	1900	2.2
December	28.9	65	1912	—26	1894	2.12	2.00	1894	9.8
Year	47.6	106	1911	—35	1904	33.70	3.82	1908	46.5

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface consists mostly of ridges and high rolling uplands. The watershed between Lake Ontario and the Susquehanna River extends from Allegany County eastward across the northern part of Steuben. The deep valley of Keuka Lake extends seventeen miles southwest from the head of the lake, connecting with the Cohocton valley at Bath. The highlands occupying the southwest corner of the county are drained by branches of the Canisteo River on the east and the Genesee River on the west. The highest summits in the county are in the town of Troupsburgh, and are about 2,500 feet above tide. The upland region has a nearly uniform elevation, with a slight inclination toward the north. It is intersected by numerous deep valleys, evidently formed by the action of water, the principal of which are those of the Canisteo and Cohocton rivers. The hills bordering these valleys are generally steep, and from 300 to 600 feet high.

Tioga River rises in Pennsylvania, uniting with the Canisteo at Erwin and with the Cohocton at Painted Post, from the latter place taking the name of Chemung River. Canaseraga Creek drains the northwest corner.

The soil in general is formed by disintegrated rocks. On the intervales along the river streams the soil is a fertile alluvium. The extensive flats on the Chemung River form excellent agricultural land.

DESCRIPTION BY TOWNSHIPS

ADDISON: The surface is mostly a hilly upland broken by the valley of the Canisteo and its branches. The principal valley is about 1½ miles wide and bordered by steep hillsides 300 to 400 feet high. Goodhue Lake lies in the northwest corner of the town. The soil is principally a clayey loam with strips of gravel and alluvium along the streams.

Products: Market milk, hay, oats, tobacco and buckwheat.

The average value of farm land is $40 an acre.

AVOCA: The surface is mostly a broken upland divided into two ridges by the Cohocton valley, which is about 1¼ miles wide.

The hillsides are steep, their summits rising 1,500 to 1,800 feet above tide. The soil is a clayey and gravelly loam.

Products: Potatoes, hay, oats, corn, market milk, buckwheat, wheat, barley and beans.

The average value of farm land is $50 an acre.

BATH: The surface is broken and hilly. The Cohocton valley divides the town into two nearly equal parts. The southern half is a hilly upland and the northern half consists of a series of wide valleys broken by several steep, isolated hills. The valley of Keuka Lake extends northwest and opens into the Cohocton valley at Bath. The soil is chiefly a gravelly and clayey loam, with a deep alluvium in the valleys.

At Bath is located the State Soldiers' and Sailors' Home.

Products: Potatoes, hay, oats, corn, market milk and cheese, sheep, buckwheat, wheat, barley, beans, and orchard fruits.

The average value of farm land is $50 an acre.

BRADFORD: The surface is a hilly upland broken by the valley of Mud Creek. The soil is generally a gravelly and clayey loam, best adapted to pasturage.

Products: Market milk, hay, oats, corn, potatoes, buckwheat and beans.

The average value of farm land is $30 an acre.

CAMERON: The surface is a high rolling upland, broken by the deep valley of Canisteo River. The soil is a clayey and gravelly loam.

Products: Potatoes, oats, hay, buckwheat, market milk and barley.

The average value of farm land is $20 an acre.

CAMPBELL: The surface consists of high, broken ridges, separated by the valleys of the streams. The hills are generally steep, and their summits are 300 to 500 feet above the valley. Cohocton River is the principal stream, the valley of which is about 1½

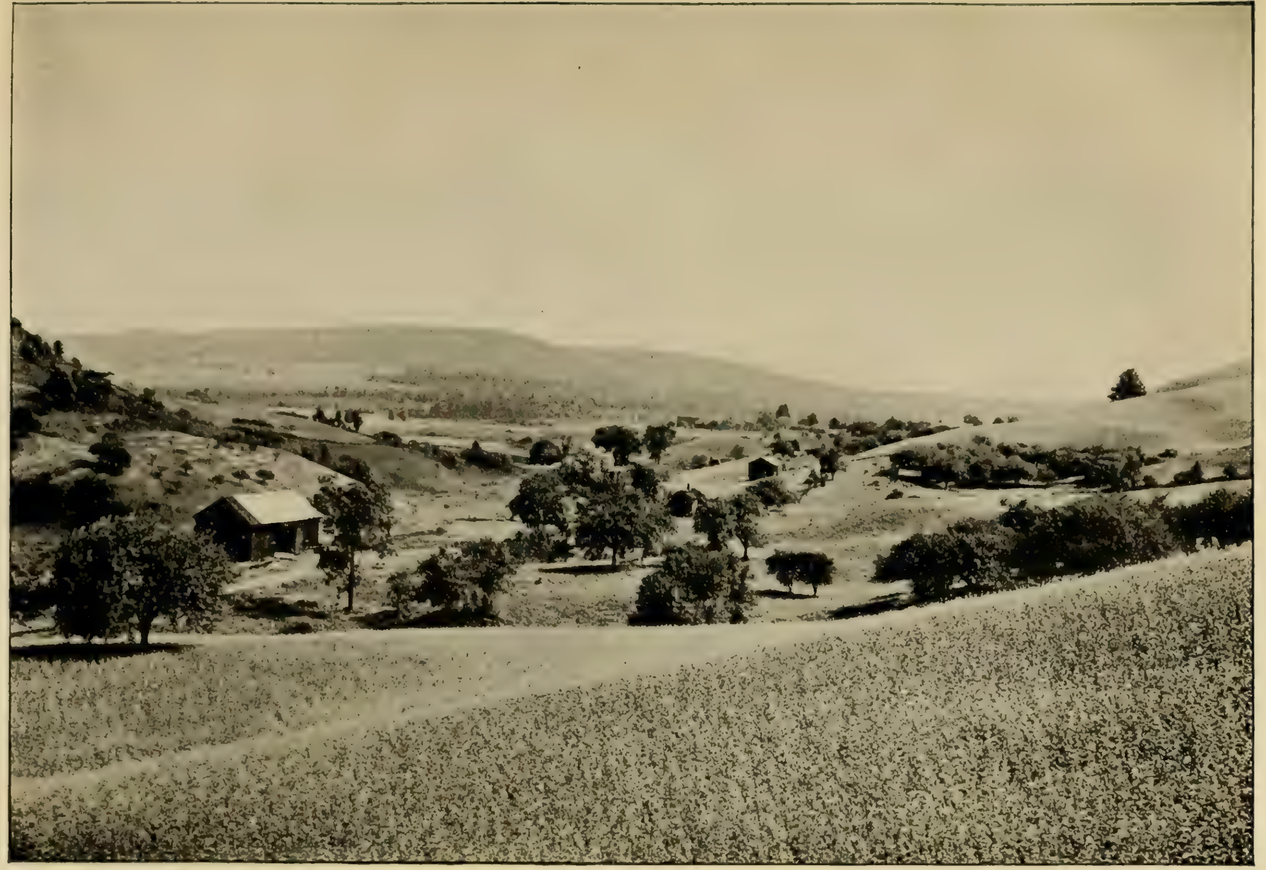


FIG. 147.—A VALLEY IN NORTHWESTERN STEUBEN COUNTY

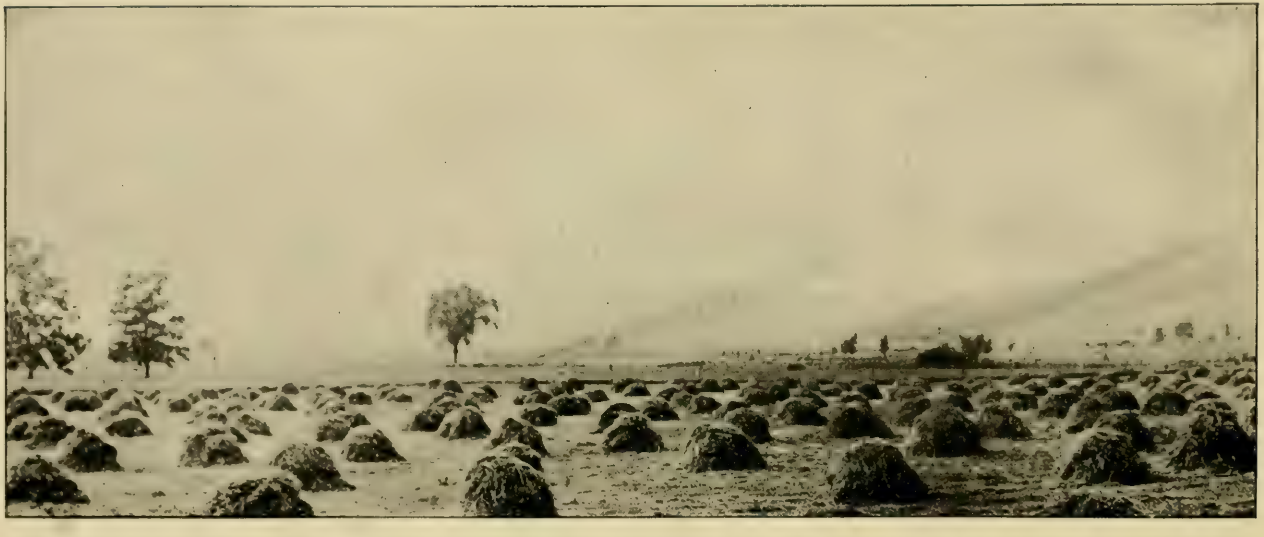


FIG. 148.—ALFALFA ON FARM NEAR KANONA

miles wide. The soil is a clayey and gravelly loam on the highlands and a rich alluvium in the valleys.

Products: Hay, oats, tobacco, market milk, cheese, wheat, rye, beans, barley and buckwheat.

The average value of farm land is $45 an acre.

CANISTEO: The surface is largely a hilly upland, broken by the deep valleys of the streams. Canisteo River flows eastward through the northern part of the town in a valley about one-half mile in width, bordered by steep hillsides 400 feet high. The soil is generally a clayey and gravelly loam. There are several herds of pure-bred Holstein-Friesian cattle in the town.

Products: Market milk, hay, oats, wheat, buckwheat, potatoes and sheep.

The average value of farm land is $30 an acre.

CATON: The surface is a rolling upland, more nearly level than most towns in the county. The streams are small brooks flowing northward. The soil is a clayey and shaly loam.

Products: Market milk, hay, oats, buckwheat, and potatoes.

The average value of farm land is $20 an acre.

COHOCTON: The surface is separated into ridges by deep, narrow valleys. The principal streams are the Cohocton River and its tributaries. The soil is generally a slaty and gravelly loam. Peas are raised for canning factory purposes.

Products: Potatoes, hay, oats, beans, buckwheat, wheat, muck crops and peas.

The average value of farm land is $50 an acre.

CORNING: The wide valley of Chemung River and several lateral valleys divide the upland into rounded hills and narrow ridges. The soil on the hills is a heavy slaty loam, and in the valleys a fine quality of sandy and gravelly loam occasionally intermixed with clay.

Products: Tobacco, market milk, hay, oats, buckwheat and corn.

The average value of farm land is $60 an acre.

DANSVILLE: The surface is mostly an upland, divided into ridges by the narrow valleys of small streams. The slopes of the hills are steep, and their summits are 300 to 400 feet above the valleys. The streams are head branches of Canaseraga Creek, flowing north, and of Canisteo River, flowing south. The soil on the east and north is a sandy, gravelly loam. In the southwest it is gravel underlaid by hardpan.

Products: Potatoes, hay, oats, muck crops, barley, wheat, buckwheat, fruits and cheese.

The average value of farm land is $40 an acre.

ERWIN: The surface is about equally divided between high, rolling uplands and low valleys of streams. The summits of the hills are 400 to 600 feet above the valleys. Tioga and Canisteo rivers unite in the southeastern part of the town, and Canisteo and Cohocton in the northeast, there forming the Chemung River. The valleys of these streams are from one to two miles wide. The soil on the hills is a shaly and clayey loam, and in the valleys it is a fine quality of alluvium.

Products: Tobacco, hay, market milk, oats, corn, wheat, and buckwheat.

The average value of farm land is $60 an acre.

FREMONT: The surface is a hilly upland and forms a part of the dividing ridge between Canisteo and Cohocton rivers. The streams are small brooks. The soil is chiefly a shaly loam derived from the disintegration of the surface rock.

Products: Potatoes, hay, oats, buckwheat, corn and fruits.

The average value of farm land is $40 an acre.

GREENWOOD: The surface is mostly a rolling upland. Bennetts Creek flows northerly through the east part of the town in a valley 400 to 600 feet below the summits of the hills. The soil is a gravelly, clayey loam. Several pure-bred Holstein-Friesian cattle are raised.

Products: Market milk, potatoes, cheese, hay and oats.

The average value of farm land is $30 an acre.

HARTSVILLE: The surface is a hilly upland, broken by several deep valleys. The principal streams are Purdy and Bennetts creeks, which are bordered by steep hillsides 400 to 600 feet high. The soil is a shaly and clayey loam. This town contains several herds of pure-bred Holstein-Friesian cattle.

Products: Market milk, hay, oats and buckwheat.

The average value of farm land is $20 an acre.

Hornby: The surface is mostly a high rolling upland. The streams are small, all flowing in deep, narrow valleys. The soil is a shaly and clayey loam of good quality.

Products: Potatoes, hay, oats, and buckwheat.

The average value of farm land is $20 an acre.

Hornellsville: The surface is mostly a rolling upland divided into two nearly equal parts by the Canisteo valley. This valley is one to two miles wide, and is bordered by steep hills 400 to 500 feet high. The soil is generally a clayey, gravelly loam. Pure-bred Holstein-Friesian cattle are kept to a considerable extent.

Products: Muck crops, market milk, hay, oats, wheat and corn.

The average value of farm land is $60 an acre.

Howard: The surface is mostly a rolling upland, forming a part of the dividing ridge between Cohocton and Canisteo rivers. The streams are all small. The soil is generally a heavy clayey loam. This town has a number of pure-bred Holstein-Friesian herds.

Products: Hay, potatoes, oats, cheese and buckwheat.

The average value of farm land is $30 an acre.

Jasper: The surface is a hilly, broken upland, the highest summits being nearly 2,000 feet above tide. The streams are small brooks. The soil is a slaty, gravelly, and clayey loam. This town contains several herds of pure-bred Holstein-Friesian cattle.

Products: Market milk, cheese, hay, oats, and buckwheat.

The average value of farm land is $30 an acre.

Lindley: The surface is a hilly upland broken by the deep valley of Tioga River. The summits of the hills are 400 to 600 feet above the valley, which is about one mile wide. The soil on the hills is a heavy shaly loam, and in the valleys a rich alluvium.

Products: Market milk, cheese, hay, oats, and buckwheat.

The average value of farm land is $30 an acre.

PRATTSBURG: The surface is a hilly upland broken by the valleys of several small streams flowing generally southwest. The valley at Prattsburg village is 1,400 feet above tide, and the hills are 300 to 400 feet higher. The soil is a gravelly, clayey loam.

Products: Potatoes, hay, oats, buckwheat, wheat and sheep.

The average value of farm land is $40 an acre.

PULTENEY: The surface is a rolling upland 1,200 to 1,500 feet above sea level. The slopes along the lake shore are broken by numerous narrow ravines formed by small streams. The soil is chiefly a shaly, gravelly loam, some parts of it near the lake being mixed with clay.

Products: Grapes, hay, oats, buckwheat and sheep.

The average value of farm land is $40 an acre.

RATHBONE: The surface is a high, rolling upland broken by the valley of Canisteo River and a branch of Tuscarora Creek. The upland is 300 to 400 feet above the valleys, above which ledges of rock crop out on the hillsides. The soil is generally a clayey, shaly loam, with alluvium in the valleys.

Products: Cheese, hay, oats and buckwheat.

The average value of farm land is $20 an acre.

THURSTON: The surface is mostly a high, broken upland dividing the Cohocton and Canisteo rivers. The soil is a shaly, gravelly loam.

Products: Market milk, cheese, hay, oats, buckwheat and sheep.

The average value of farm land is $30 an acre.

TROUPSBURGH: The surface is principally a hilly upland broken by the deep valleys of small streams. The highest summits are 2,500 feet above tide. Troups Creek, flowing south, is the principal stream. The soil is a slaty, clayey loam.

Products: Market milk, cheese, hay, and oats.

The average value of farm land is $20 an acre.

TUSCARORA: The surface is largely a hilly upland. The principal streams are branches of the Tioga and Canisteo rivers. The soil is largely a clayey loam, with alluvium along the streams.

Products: Market milk, cheese, hay, oats and sheep.

The average value of farm land is $20 an acre.

URBANA: The surface is divided by Pleasant valley, a continuation of Keuka Creek valley, into two series of highlands rising 1,500 to 1,900 feet above tide. The soil in the valleys is alluvial, and on the hilltops a heavy gravelly loam. From their sheltered situation, the slopes of the hills descending to the south and east are well adapted to grape culture.

Products: Grapes, orchard fruits, hay, wheat, and oats.

The average value of farm land is $40 an acre.

WAYLANDS: The surface is an upland, rolling in the north and moderately hilly in the south, forming a portion of the watershed between the Susquehanna River and Lake Ontario. The highest summits are 1,600 to 1,800 feet above tide. Loon and Mud creeks lie in a valley in the southern part of the town, and their waters flow in opposite directions. The soil in the north is gravel and muck; in the south it is a shaly loam.

Products: Potatoes, muck crops, hay, oats, wheat and fruit.

The average value of farm land is $50 an acre.

WAYNE: The surface is a rolling upland 400 to 600 feet high, descending abruptly to the lake. Little Lake lies along the east border. The soil is a gravelly, slaty loam underlaid by hardpan.

Products: Grapes, fruits, hay, oats and buckwheat.

The average value of farm land is $40 an acre.

WEST UNION: The surface is a broken, hilly upland, the highest summits being 2,000 to 2,400 feet high. Bennetts Creek is the principal stream. The soil is a heavy slaty loam.

Products: Market milk, hay, oats, potatoes and buckwheat.

The average value of farm land is $20 an acre.

WHEELER: The surface is a high, rolling upland broken by the valleys of Five-mile and Ten-mile creeks and their tributaries. The soil is a shaly, clayey loam, well adapted to both grazing and tillage.

Products: Potatoes, hay, oats, wheat and corn.

The average value of farm land is $40 an acre.

WOODHULL: The surface is a hilly upland. The principal stream is Tuscarora Creek, which flows east through the northern part of the town. The soil is a clayey, gravelly loam.

Products: Market milk, cheese, hay and oats.

The average value of farm land is $20 an acre.

MARKETING CONDITIONS

Railroads

The Erie Railroad enters the southeastern part of Steuben County and extends west to Painted Post, where it divides into two branches. Each of these branches runs northwest, one through the Cohocton valley and the other through the Canisteo valley, the former extending to Batavia and the latter to Buffalo. The Delaware, Lackawanna and Western also enters the southeastern part of the county and extends northwest through the Cohocton valley, continuing to Buffalo.

A New York Central line connecting with the main line at Lyons runs south into Pennsylvania, crossing the southeastern part of Steuben County and passing through Corning.

From Addison on the Erie the Buffalo and Susquehanna runs south into Pennsylvania.

The New York and Pennsylvania connects with the Erie at Canisteo and extends southwest into Pennsylvania. This road is not in operation at the present time, although it may again become active. The Bath and Hammondsport extends from Bath on the Erie to Hammondsport on Lake Keuka.

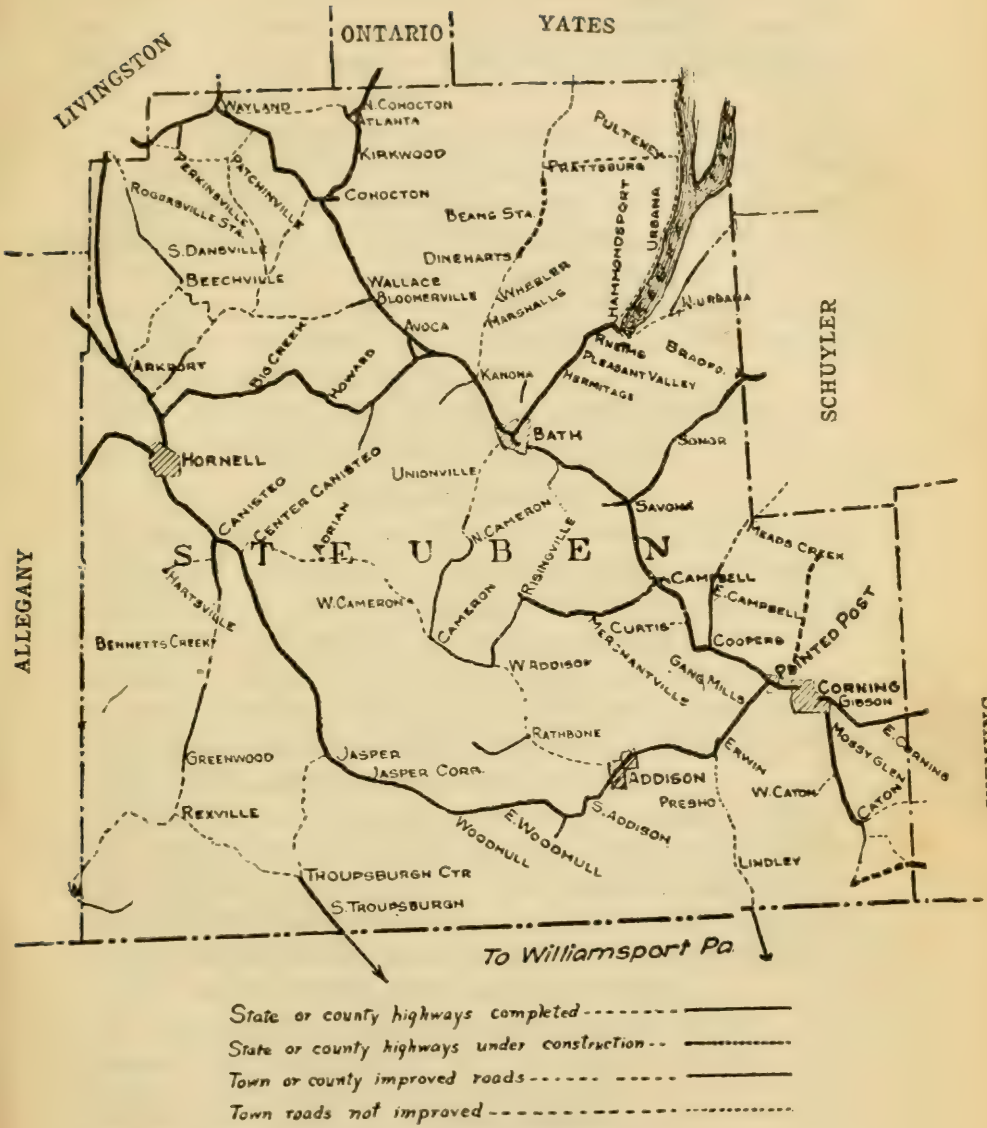
The Kanona and Prattsburg extends from Kanona to Prattsburg. The Pittsburg, Shawmut and Northern Railroad extends from Hornell to Moraine in the northeast corner of Allegany County. From this point a line extends north to Wayland on the Erie in Steuben County and another extends west and southwest through Allegany County.

Electric Roads

An electric road extends from Corning east to Elmira, Chemung County. There is also an electric line running between Hornell and Canisteo.

Improved Highways

From Corning improved highways lead as follows: east to Horseheads and Elmira; south to Caton; west to Painted Post.


LIVINGSTON
ONTARIO
YATES
SCHUYLER
CHEMUNG
ALLEGANY
STEUBEN
Wayland
N. Cohocton
Atlanta
Kirkwood
Cohocton
Perkinsville
Patchinville
Rogersville Sta.
S. Dansville
Beechville
Wallace
Bloomerville
Avoca
Arkport
Big Creek
Howard
Hornell
Canisteo
Center Canisteo
Adrian
Hartsville
Bennetts Creek
Greenwood
Rexville
Troupsburgh Ctr
S. Troupsburgh
Jasper
Jasper Corr.
Woodhull
E. Woodhull
S. Addison
Addison
Rathbone
W. Addison
W. Cameron
Cameron
N. Cameron
Risingville
Unionville
Bath
Kanona
Wheeler
Marshalls
Dineharts
Beans Sta.
Prattsburg
Pulteney
Hammondsport
Urbana
N. Urbana
Rheims
Pleasant Valley
Hermitage
Bradfd.
Sonora
Savona
Campbell
E. Campbell
Meads Creek
Coopers
Curtis
Merchantville
Gang Mills
Painted Post
Corning
Gibson
E. Corning
Mossy Glen
Caton
W. Caton
Erwin
Presho
Lindley
To Williamsport Pa.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

From the latter point the road extends southwest through Addison to Hornell; another road leads northwest through Bath to Hornell. From Hornell improved highways lead north to Dansville, Livingston County; east to Waylands; and southeast through Cohocton and Avoca to Bath.

Other improved highways are as follows: From Cohocton northeast to Canandaigua Lake; from Bath northeast to Keuka Lake; from Savona northeast into Schuyler County, where it makes connections to the north with the highway crossing the state through Geneva, and to the south with the roads running to Ithaca and Syracuse or to Elmira and Binghamton; from Corning south to Caton; from Campbell west to Risingville; from Troupsburg Center to South Troupsburg.

There are in the county 183 miles of completed improved highways, with 15 miles additional under construction.

AVAILABLE MARKETS

The two cities of Steuben County, Corning and Hornell, form the principal local markets. Corning has an extensive glass industry, where Pyrex ware and automobile lenses are manufactured. Large railroad shops are also located here.

Hornell is the seat of one of the largest plants in the country for the manufacture of doors, sash, blinds, etc., a large quantity of which are exported to all parts of the world. This place is also the largest silk manufacturing center in the state.

Within the county are 46 establishments handling milk and milk products, the greater part of which is sold in the form of market milk and condensed milk. Over 12 million pounds of condensed and evaporated milk is manufactured, besides 1¼ million pounds of American cheese and about 400,000 pounds of butter.

There are four canning factories in the county.

The agricultural organizations are as follows:

Allegany County Ayrshire Club.
Allegany-Steuben Holstein-Friesian Breeders' Club.
Arkport-Burns Growers' and Shippers' Association.
Chemung County National Farm Loan Association.
Cohocton Valley National Farm Loan Association.
Corning Poultry Association.
Elk Creek Dairy Products Cooperative Association, Inc.
First Steuben National Farm Loan Association.
Granges: Pomona and 43 subordinate granges.

Hammondsport Grape Growers' Cooperative Association, Inc.
Hornellsville Fair.
Southern Steuben Agricultural Society.
Steuben County Agricultural Society.
Steuben County Dairymen's League.
Steuben County Farm Bureau Association.
Steuben County Growers' Association, Inc.
Steuben County Sheep Breeders' Cooperative Association, Inc.
West Caton Cheese Association.

EDUCATIONAL FACILITIES

Approved courses in agriculture and home making are given at Hammondsport.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Addison, Arkport, Avoca, Bath, Bradford, Campbell, Canisteo, Cohocton, Corning, Greenwood, Hammondsport, Hornell, North Cohocton, Painted Post, Prattsburg, Pulteney, Savona, Troupsburg, Wayland, and Woodhull.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	818,373 acres
Number of farms	7,363
Per cent of farm land improved	73.2

LIVE STOCK PRODUCTS

Milk sold	7,210,716 gal.
Cream sold	40,536 gal.
Butter fat sold	1,430,723 lbs.
Butter produced	1,067,709 lbs.
Cheese produced	39,455 bu.
Eggs produced	1,795,457 doz.
Wool produced	40,356 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	20,506
Cattle	65,480
Sheep	53,161
Swine	17,740
Poultry	296,172

BEES

Number of colonies	7,576

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	8,552	228,411 bu.
Oats	70,992	1,216,138 bu.
Wheat	8,783	168,160 bu.
Barley	4,878	68,098 bu.
Buckwheat	25,867	341,264 bu.
Rye	5,097	71,102 bu.
Hay and forage	192,795	189,482 tons
Special Crops:		
Potatoes	30,524	3,279,953 bu.
Vegetables, other than potatoes	2,737	....
Dry edible beans	632	7,128 bu.
Dry peas	31	433 bu.
Fruits:		
Apples	248,951 trees	338,957 bu.
Peaches and nectarines	8,200 trees	3,154 bu.
Pears	17,555 trees	12,269 bu.
Plums and prunes	20,258 trees	7,747 bu.
Cherries	15,412 trees	3,802 bu.
Quinces	257 trees	59 bu.
Grapes	2,568,026 vines	17,509,702 lbs.
Small fruits	271 acres	317,574 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	6,581	5,999

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	18,944	16,881
Cattle	63,836	57,375
Sheep	33,306	27,078
Swine	12,236	10,459
Poultry	309,196	247,204

BEES

	1917 Number	1918 Number
Number of colonies	4,714	4,292

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	7, 159	4, 771	80, 079 bu.
Oats	58, 779	55, 815	1, 724, 447 bu.
Barley	6, 437	4, 906	72, 293 bu.
Buckwheat	19, 185	14, 396	223, 425 bu.
Wheat (winter)	8, 923	8, 507	128, 965 bu.
Wheat (spring)	477	838	8, 529 bu.
Rye	4, 735	4, 848	64, 616 bu.
Hay and Forage:			
Alfalfa	2, 872	2, 058	4, 295 tons
Other hay	166, 308	163, 567	165, 569 tons
Corn (ensilage)	10, 324	7, 152	41, 035 tons
Corn (fodder)	....	3, 773	....
Special Crops:			
Field beans	4, 514	5, 960	33, 201 bu.
Cabbage	2, 135	348	3, 128 tons
Potatoes	18, 160	24, 411	1, 514, 641 bu.
Roots raised for stock food	....	223	....
Canning factory crops	1, 649	1, 393	....
Other vegetables and garden crops	940	1, 199	....
Fruits.			
Apples	9, 288	9, 182	115, 574 bu.
Peaches	217	218	990 bu.
Pears	255	172	2, 674 bu.
Plums	290	122	18, 246 lbs.
Cherries	198	125	4, 892 lbs.
Quinces	....	2	8 bu.
Vineyard	2, 518	3, 305	4, 845, 608 lbs.
Small fruits	414	342	....

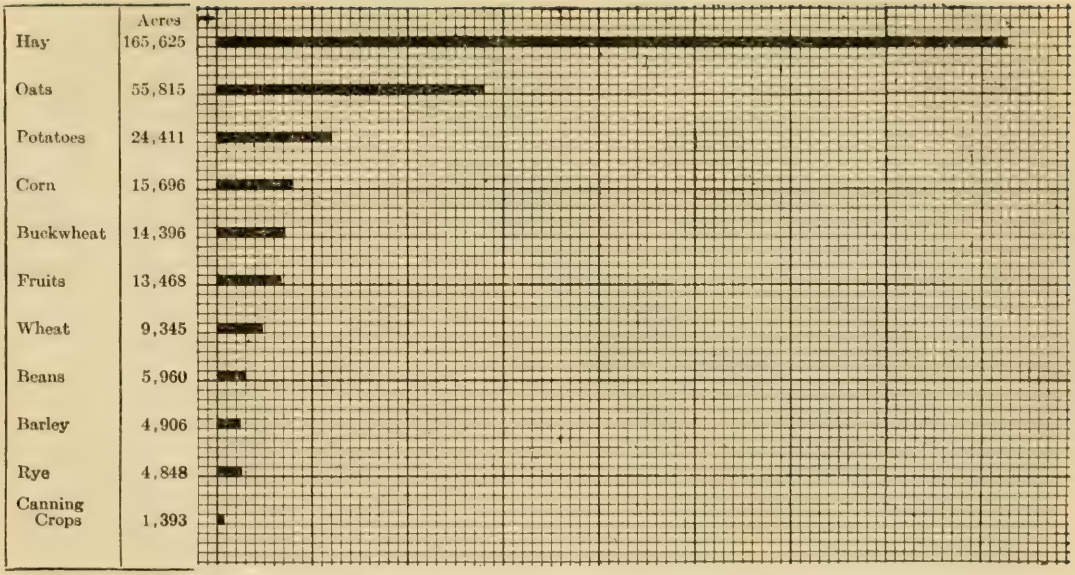


Fig. 149.—Chart Showing Relative Acreage of Crops in Steuben County

SUFFOLK COUNTY

This county occupies the eastern part of Long Island. It has an area of 591,360 acres. From east to west its extent is approximately 75 miles and from north to south 15 miles. The population is shown in the following table:

Population by Towns

(Census of 1915)

Babylon	11,190	Smithtown	4,988
Brookhaven	19,591	Southampton	13,453
Easthampton	5,164	Southold	10,008
Huntington	15,244		
Islip	17,658	Total	104,342
Riverhead*	5,730		
Shelter Island	1,155		

---

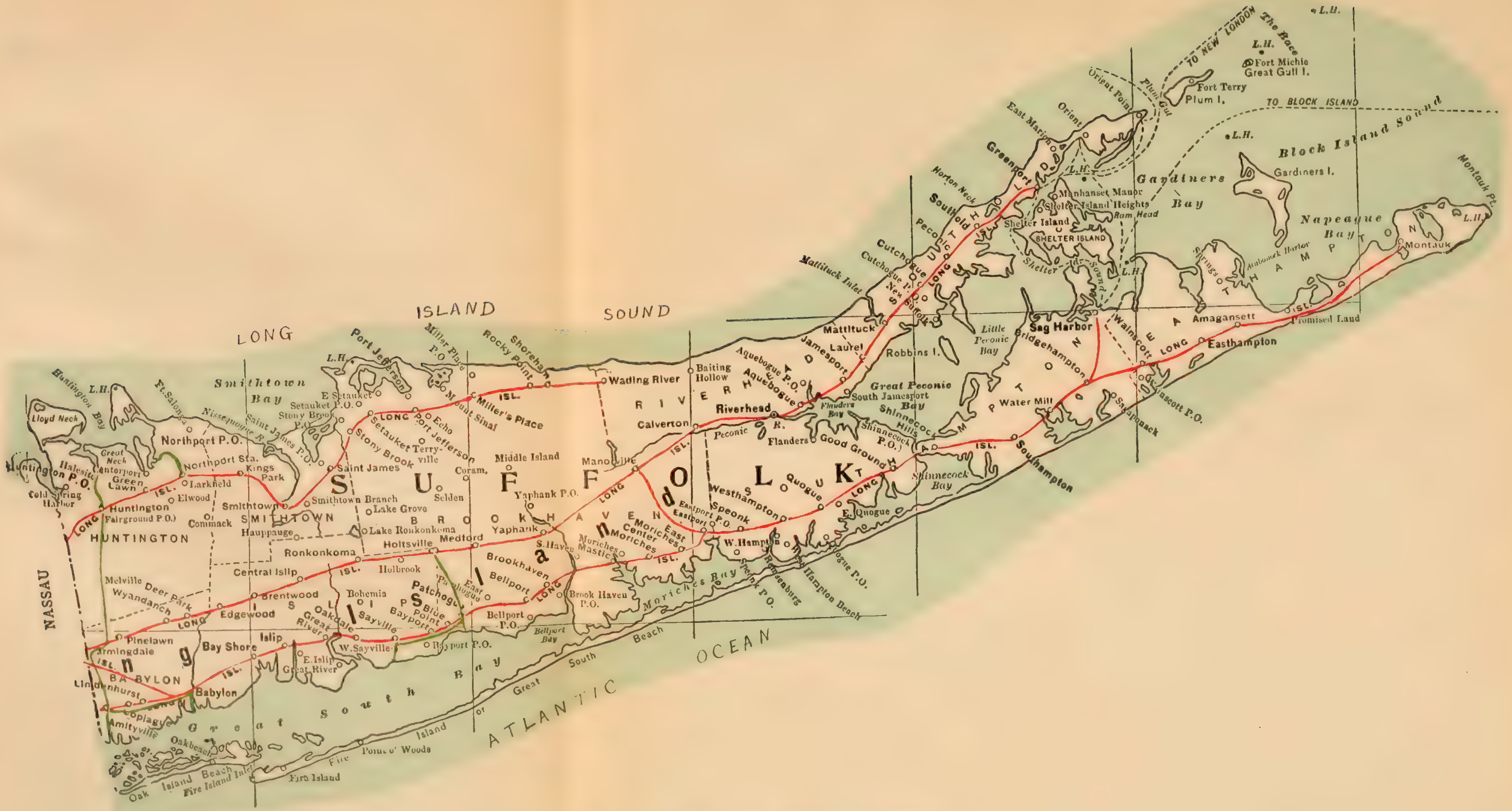
* Riverhead, in the town of Riverhead, is the county seat.

HISTORICAL ASSOCIATIONS

When Long Island first became known it was inhabited by thirteen tribes of Indians, of which all but two resided wholly or partly in this county. Of these the Montauks were the most numerous and powerful. After the death of their sachem they came under the control of the Narragansetts. At present there are two small reservations in the county — the Shinnecock and the Poospatuck.

All the towns in Suffolk County were settled by the English. It is the oldest county of purely English settlement in New York State. At about 1636 permanent settlements were made on the western end of Long Island by the Dutch, and on the east end by the English, both purchasing their lands from the Indians. English immigrants were permitted to settle on territory claimed by the Dutch after taking the oath of allegiance to the Dutch government.

The eastern towns were independent for some years. When a new charter was granted to Connecticut in 1662 it was interpreted to include the whole of Long Island, whereupon these towns were at once annexed to Connecticut. Two years later the Duke of York obtained the grant that included New Amsterdam



MAP OF SUFFOLK COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads

and Long Island. Connecticut at first maintained her claim to the eastern towns, and some time elapsed before it was ultimately settled that the island belonged to New York.

When, in 1670, a levy was made on the towns to raise money for repairing the fort at New York, nearly all the English towns, by vote, refused to obey the order for the contribution or levy unless "they might have the privileges that other of his majesty's subjects have and do enjoy." This is the first record of protest against taxation without representation.

DEVELOPMENT OF INDUSTRY

Considerable trade with the West Indies was carried on during the latter part of the seventeenth century. Whale oil and bone were the first exports to Europe.

Woolen manufacturing was commenced, both in Suffolk County and in Connecticut, about the year 1700, in spite of the efforts of the mother country to divert the attention of the colonists from manufacturing. The business of tanning and preparing leather was begun a short time previous. Other prominent industries of the time were the manufacture of hats from beaver fur and of linseed oil from the flax plant.

The early settlers naturally followed the same system of tillage and rotation of crops to which they had been accustomed. Cattle were imported for breeding as early as 1625. At that time there were few or no fences, and herdsmen were hired by the town to take care of the cattle from May 11 to October 23, when the corn would be entirely harvested. So important was this office deemed that the conditions of agreement were entered on the town book.

For nearly 200 years, or until the beginning of the nineteenth century, the staple products of the island and the chief sources of income were corn, wheat, rye, oats, flax, wood for fuel, and fat cattle and sheep. During the Revolution a tory advised the British minister to land horses on the island; "For," he said, "in this fertile island the army can subsist without any succor from England." The English army occupied Long Island, therefore, with New York as its headquarters, for nearly seven years, drawing most of its supplies from the neighboring lands.

With the growth of New York and Brooklyn arose the demand for vegetables, milk, hay, and other articles of a bulky or perishable nature that cannot be profitably transported long distances. As a consequence the production of cereals and the raising of stock became greatly decreased. Sixty years ago all the milk supplied by Long Island was produced within so small a distance from the city that it was taken in in wagons. As market gardening became more profitable, the area of milk products was gradually extended eastward along the lines of railroad until the garden business has assumed immense proportions. For the past forty years, on account of the great throngs of market wagons, a public market has been established in the vicinity of West 12th Street and Tenth Avenue.

At the present time little attention is given to producing milk or live stock for market. On the other hand, Suffolk County leads in the production of potatoes and acreage of garden crops, and takes second place in the production of cabbage, according to the census of 1918. The variety of corn known as Luce's favorite was originated in this section. Few, if any, counties excel in the production of lima beans, cabbage seed, brussels sprouts, Pekin ducks, and cranberries. The townships of Southold and Riverhead produce the larger part of the cauliflower, brussels sprouts, lima beans, and cabbage seed. Southampton produces a considerable quantity of potatoes. Ducks are raised mainly around Riverhead and on the south side between Westhampton and Moriches. Several large bogs of cranberries lie along the Peconic River in the towns of Riverhead and Southold. In the western end of the county vegetables are extensively grown, including large quantities of cabbage for the kraut factories and cucumbers for pickles. The pickle and kraut factories are located at Farmingdale, Huntington, Greenlawn, and several other towns. Through the center of the county considerable quantities of garden vegetables are raised for towns and summer resorts along both the north and the south shore. The acreage devoted to this purpose is more than double that of any other county in the state.

The bays that break in upon the shore on all sides afford large stores of fish, eels, oysters, and other species of animal life, besides the vegetable matter of different kinds that is gathered from the waters for use as fertilizing materials on the adjoining farms. Hundreds of thousands of acres are devoted to oyster growing, which furnishes employment for large numbers of men and women throughout the year, and requires many steamers, power boats, and schooners. About two carloads of fish are sent from Montauk and other eastern towns daily, principally flounders, weak fish, bluefish, and sea bass. Oysters are shipped in large quantities from Sayville and Greenport.

Shipbuilding is an important business at Greenport, Huntington, and Port Jefferson. There is also a large brickyard at Greenport. Other important manufactures within the county are as follows: cigars at Riverhead; laces and hats at Patchogue; buttons at Amityville; Fulton Motor Trucks at Farmingdale; and torpedoes and watchcases at Sag Harbor.

CLIMATE AND RAINFALL

Climatological records for Suffolk County have been taken from the Setauket station, which has an elevation of forty feet. The present observer is S. B. Strong.

The average dates for the last killing frost in spring and the first in fall are April 15 and November 8, respectively, giving a growing season of 207 days.

The following table covers the period 1900 to 1918, with the exception of the average temperature and precipitation, the record of which was begun in 1886:

Record of Temperature afd Precipitation at Setauket

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	30.9	66	1916	—3	1914	4.05	2.92	1900	6.9
February	29.4	62	1915	—6	1918	3.90	2.28	1900	7.3
March	36.9	76	1910	7	1916	4.26	2.66	1900	6.5
April	47.3	86	1915	25	1909	3.68	2.60	1901	2.4
May	58.0	91	1900	34	1917	3.40	2.96	1900	......
June	66.2	92	1904*	40	1907	2.64	1.61	1905	......
July	72.1	98	1911*	51	1912	4.24	3.80	1918	......
August	70.7	95	1900	50	1905	4.20	4.25	1911	......
September	64.8	90	1914	37	1904	3.54	3.17	1904	......
October	54.7	82	1916	31	1914	4.33	6.37	1906	T.
November	44.2	71	1914	16	1901	3.72	2.62	1900	0.3
December	34.7	63	1912*	—7	1917	4.11	2.35	1915	5.8
Year	50.8	98	1911*	—7	1917	46.07	6.37	1906	29.2

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is elevated and broken along the northern side, and low and flat along the south side. Through the middle from west to east runs a chain of hills, the highest of which, known as Jayne's or Oakley's hill, rises about 350 feet above tidewater near the west end of the county. In the eastern part are several fresh-water lakes, and a few others in the central and western part.

The principal streams are the Peconic River in the east and the Connetquot in the central part.

The irregularity of the shore line, which is hundreds of miles in length, results in attractive sites for many beautiful homes, as well as many noted summer resorts.

The soil of the northern part is a heavy rich loam; although that in the southern part is much lighter, it affords many fertile spots. The central belt presents a great variety. In this section hills of sand and gravel alternate with marshes, while fertile patches and beds of clay and peat are frequently to be found.

DESCRIPTION BY TOWNSHIPS

BABYLON: With the exception of the sand dunes bordering the Atlantic, and a narrow ridge of hills, the surface of the town is remarkably level. The soil is mostly a sandy loam, well adapted to the growing of grain and root crops. At Amityville there is located a large button factory.

Products: Hay, corn, oats, wheat and rye.

Average values of farm land range from $150 to $300 an acre.

BROOKHAVEN: A range of low hills extends across the northern part of the town; through the middle is a section of rolling land; elsewhere the land is level. The soil is generally a light sandy loam, with patches of rich heavy loam in different parts, more commonly on the north side. In the rolling land of the center, ponds, marshes, streams, clay beds and rich deposits of muck or peat abound. Exclusive of the shore line of the bays, this town has more seacoast than any other on Long Island, extending 19 miles along the sound and 24 miles along the ocean.

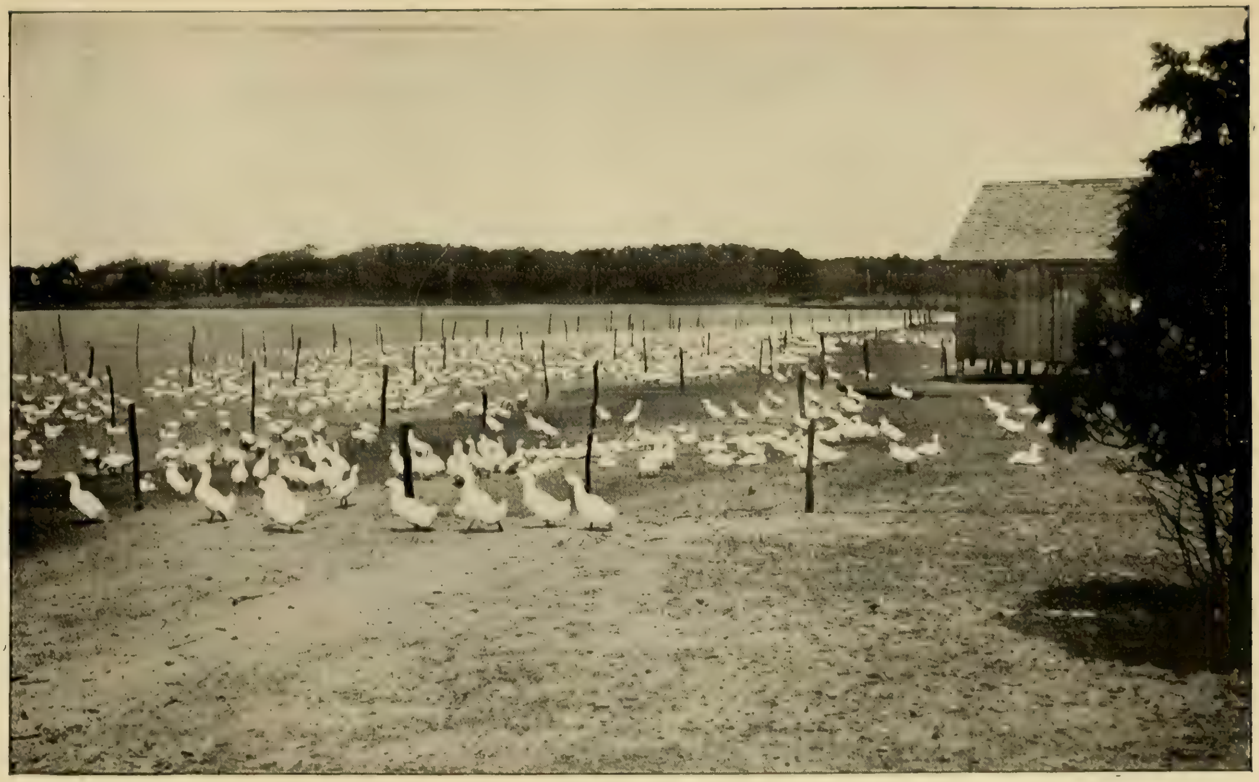


Fig. 150.—Many Ducks are Raised in Suffolk County

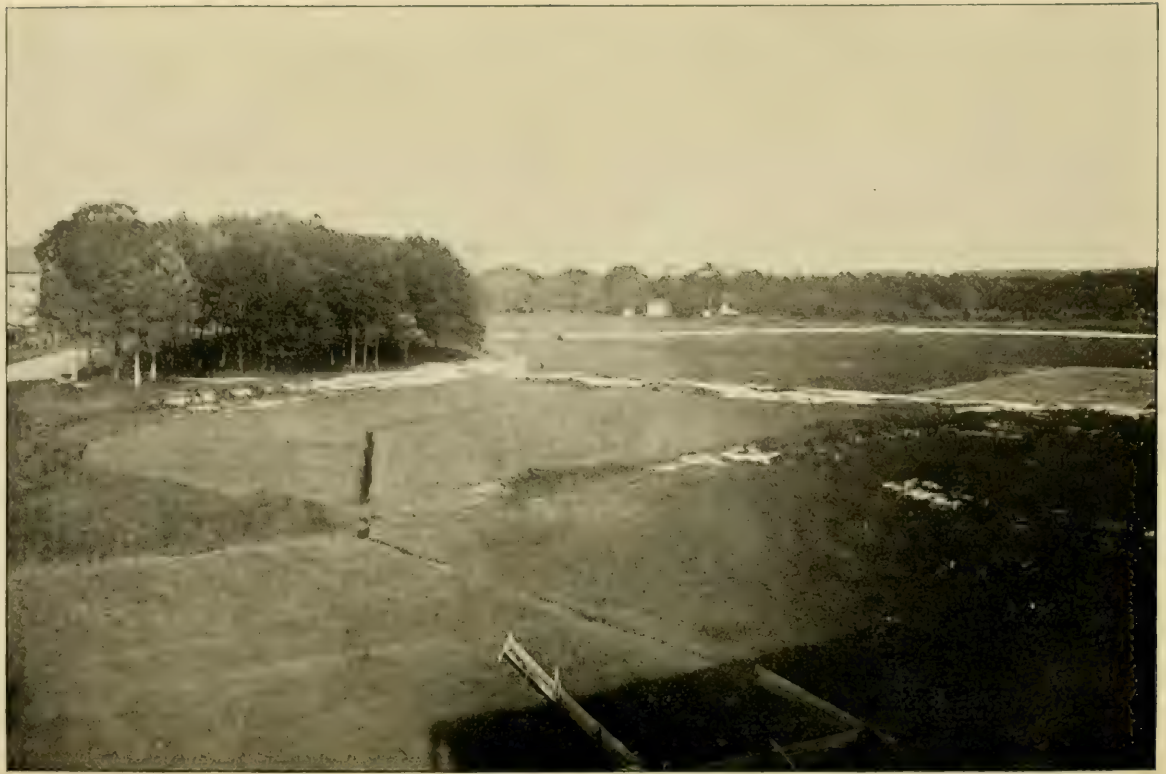


FIG. 151.— CRANBERRY MARSH, SUFFOLK COUNTY

At Patchogue are located large lace and hat factories. Shipbuilding is carried on at Port Jefferson.

Products: Hay, corn, oats, rye, wheat and ducks.

Average values of farm land range from $150 to $250 an acre.

EAST HAMPTON: In the central and western parts the surface is mostly level or gently undulating; along the coast on the south is a belt of shifting sand ridges. The eastern part is broken by low, irregular hills, some of which attain an elevation of 100 feet above the sea. Near the coast in the southern part of the town and on the peninsula are several fresh-water ponds. The outlets of many of them have been closed by sandbars or beaches. On the main portion of the peninsula of Montauk the soil is fertile, while its neck is a barren, sandy waste. In the western part the soil is a light, sandy loam, kept highly fertile by the use of manures.

Products: Potatoes, corn, wheat, oats, rye and hay.

Average values of farm land range from $200 to $300 an acre.

HUNTINGTON: Groups of low hills extend through the center, and the surface two to three miles from the sound is broken; elsewhere it is comparatively level. The soil in the northern and southern sections is fertile. Some portions of the interior are unproductive.

Products: Pickles, cabbage, corn, hay, oats, wheat, rye and tomatoes.

Average values of farm land range from $150 to $500 an acre.

ISLIP: The central range of hills, known as the "backbone" of the island, faces the northern boundary of this town. The surface is level or generally sloping toward the south from the base of this range. The northern part of the town is included in the region long known as the plains, or "barrens," of the island. Brush plains occupy all the central portion, and near the coast are extensive salt meadows. The principal streams are the Connetquot River and Sampawams or Thompson's Creek. Great

South Bay, which has an average width of about 4 miles, passes through the southern part of the town from east to west. On a tract extending along the bay, and varying in width from 1 to 3 miles, the soil is fertile. At Central Islip is located a state hospital.

Products: Hay, corn, oats, wheat and rye.

Average values of farm land range from $150 to $250 an acre.

RIVERHEAD: The surface in the southern part is level, but in the northern part it is hilly. The shore is lined with high, and sometimes precipitous, bluffs of clay and hardpan. The soil of the elevated portion is strong and fertile, and produces abundant crops of potatoes, vegetables, grain, and hay. In the southern part of the town the soil is mixed with sand. Small fruits, grain, vegetables, and root crops are raised in the eastern part of this section, and cranberries are raised to a considerable extent in marshes abounding in the western part about the headwaters of the Peconic River. At Riverhead there is located a large cigar factory.

Products: Potatoes, cauliflower, brussels sprouts, cabbage seed, lima beans, carrots, beets, onions, cucumbers, corn, wheat, oats, rye, peaches and ducks.

Average values of farm land range from $200 to $350 an acre.

SHELTER ISLAND: The island is very irregular, jutting headlands extending out into the surrounding waters on all sides and branching bays penetrating into the interior. The surface is hilly and the soil fertile.

Products: Cucumbers, tomatoes, apples, corn, wheat, oats, rye and lima beans.

Average values of farm land range from $250 to $400 an acre.

SMITHTOWN: The surface is considerably broken and hilly. The Nissequogue River divides the town into two nearly equal parts. The soil is a light, sandy loam along the sound. Kings Park State Hospital is located in this town.

Products: Hay, corn, oats, rye, wheat and ducks.

Average values of farm land range from $150 to $250 an acre.

SOUTHAMPTON: The entire southern shore is skirted by a beach which is united in a few places with the mainland, separating the inclosed waters into distinct bays. Minor bays branching from these divide the surrounding shores into numerous irregular "necks." The outline of the northern coast is extremely irregular. A range of low hills extends along the northern shore of the town and the Shinnecock Hills occupy the central part; elsewhere the surface is level.

The soil in the eastern and southern parts consists of a light, sandy loam, and is moderately fertile. In the other parts it is of an inferior quality. The greater part of the western portion has not been largely cultivated, but the eastern part has a large extent of excellent land under careful cultivation.

At Sag Harbor are large torpedo and watchcase factories.

Products: Potatoes, corn, wheat, oats, rye and hay.

Average values of farm land range from $200 to $350 an acre.

SOUTHOLD: The surface is generally level. The coast on the north is high and in many places precipitous, while on the south side the shore is generally low, with excellent meadows along the banks of the creeks. The soil is a light, sandy loam.

At Greenport is located an extensive brickyard. Shipbuilding is also carried on.

Products: Potatoes, cauliflower, brussels sprouts, cabbage seed, lima beans, carrots, beets, onions, cucumbers, corn, wheat, oats and rye.

Average values of farm land range from $250 to $400 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Each of the two peninsulas at the eastern end of Long Island are traversed by a line of the Long Island Railroad running the entire length of the county. Short sections connect these two lines in the towns of Brookhaven and Babylon.

Another short section runs from Bridgehampton to Sag Harbor along the north side of the county, and a line of this railroad extends east as far as Wading River.

Electric Roads

An electric road extends across the western part of the county from north to south. Another line from Babylon on the south shore connects with the first line at Amityville.

Patchogue is in the angle formed by a road running north to Holtsville and west to Sayville. A short section connects the Long Island Railroad at Northport with Huntington Bay.

Improved Highways

An improved highway follows the southern shore from Amityville as far east as Moriches. From Patchogue a road extends across the island north to Port Jefferson and southwest through St. James and into Nassau County. The latter road is crossed by one that leads from Huntington south to Amityville. A branch leads from Smithtown northwest to Fort Salonga, and another south from Smithtown Branch, which, when completed, will reach East Islip. Riverhead is connected with Quogue and Southhampton by an improved highway, as are also Easthampton, Sag Harbor, and Shelter Island.

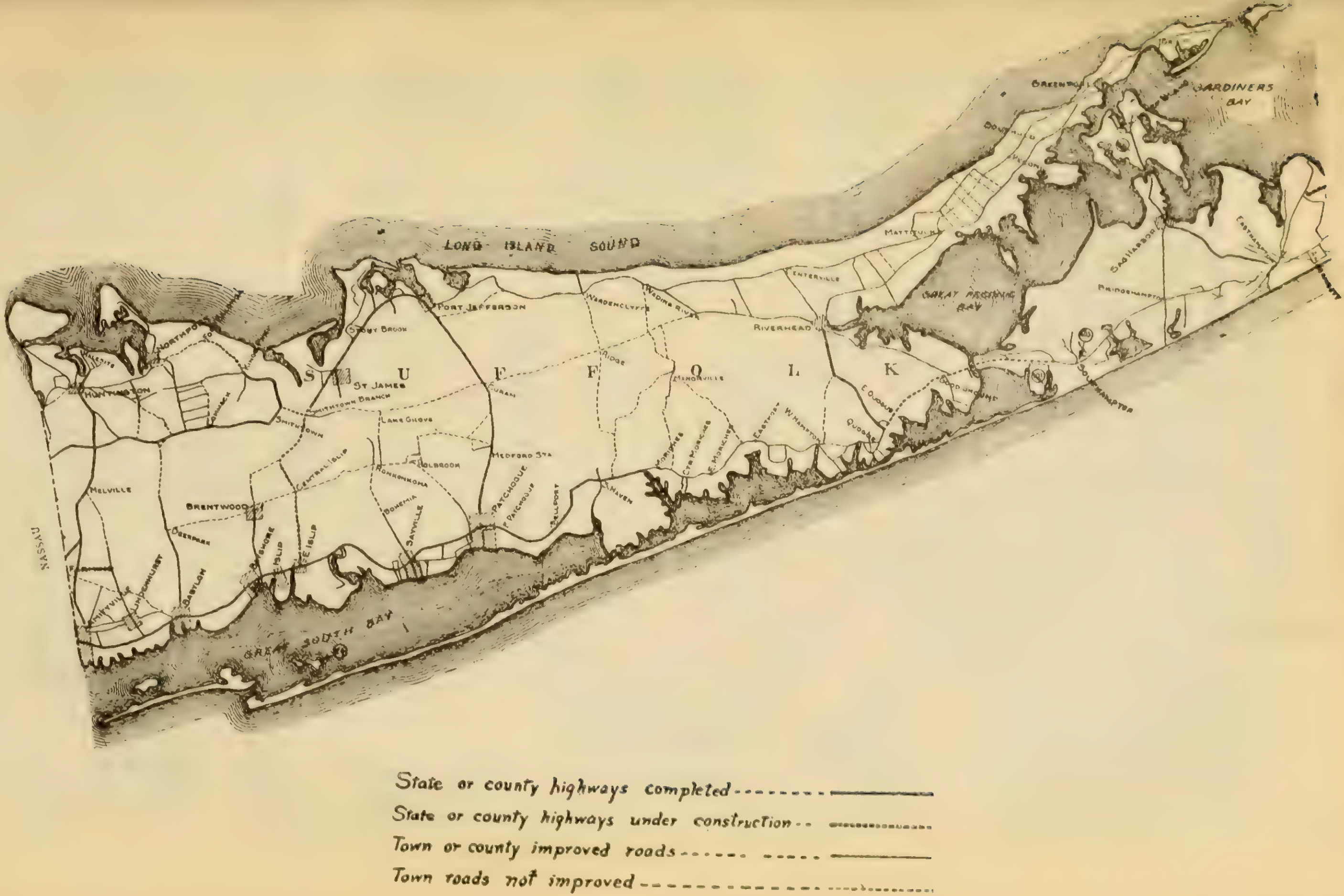
There are in the county 119 miles of completed improved highways, with 20 miles additional under construction.

AVAILABLE MARKETS

Besides the numerous resorts, several towns in the county, including Greenport and Port Jefferson, furnish excellent markets. New York City is supplied with a large amount of produce, particularly vegetables and ducks.

The agricultural organizations are as follows:

Empire Poultry Association, Inc.
Farmers' Commission House, Inc.
Islip Garden Club.
Granges: Pomona and thirteen subordinate granges.
Long Island Cauliflower Association.
Long Island Poultry Association.
Northport Farmers' Club.
Riverhead Town Agricultural Society.
Sayville Poultry Association.
Southampton Horticultural Society.
Suffolk Cooperative Association, Inc.
Suffolk County Agricultural Society.
Suffolk County Farm Bureau Association.
Suffolk County National Farm Loan Association.
Suffolk County Seed Potato Association.


LONG ISLAND SOUND
GARDINERS BAY
GREAT PECONIC BAY
GREAT SOUTH BAY
NASSAU
S U F F O L K
Greenport
Southold
Peconic
Mattituck
Jamesport
Riverhead
Wading River
Wardenclyffe
Port Jefferson
Stony Brook
St James
Northport
Huntington
Smithtown
Smithtown Branch
Lake Grove
Central Islip
Holbrook
Ronkonkoma
Bohemia
Sayville
Medford Sta
Patchogue
E Patchogue
Bellport
Haven
Coram
Ridge
Manorville
Moriches
Ctr Moriches
E Moriches
Eastport
W Hampton
Quogue
E Quogue
Good Ground
Southampton
Bridgehampton
Sag Harbor
East Hampton
Melville
Brentwood
Deer Park
Babylon
Lindenhurst
Amityville
Bay Shore
Islip
E Islip
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

EDUCATIONAL FACILITIES

Suffolk County has thirty-two schools registered as having suitable facilities for maintaining approved courses in high school and academic work, located as follows: Amityville, Babylon, Bay Shore, Bayport, Bellport, Bridgehampton, Center Moriches, Central Islip, East Hampton, East Islip, Eastport, Good Ground, Greenport, Huntington, Islip, Lindenhurst, Mattituck, Northport, Orient, Patchogue, Sag Harbor, Port Jefferson, Riverhead, St. Johnsville, Sayville, Setauket, Shelter Island, Smithtown, Southampton, Southold, Stonybrook, and West Hampton.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	178,063 acres
Number of farms	2,491
Per cent of farm land improved	53.7

LIVE STOCK PRODUCTS

Milk sold	1,142,997	gal.
Cream sold	3,007	gal.
Butter fat sold	3,026	lbs.
Butter produced	222,677	lbs.
Cheese produced	1,183	lbs.
Eggs produced	1,302,092	doz.
Wool produced	2,270	fleeces

LIVE STOCK AND POULTRY

	Number
Horses	6,347
Cattle	9,666
Sheep	3,647
Swine	9,945
Poultry	305,844

BEES

Number of colonies	111

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	13,989	743,721
Oats	2,602	61,257
Wheat	3,735	87,812
Barley	19	413
Buckwheat	125	2,009
Rye	1,981	29,702

	Acres	Yield
Hay and forage	16,577	22,011 tons
Special Crops:		
Potatoes	15,407	2,200,178 bu.
Vegetables, other than potatoes	7,050	....
Dry edible beans	29	196 bu.
Fruits:		
Apples	27,760 trees	28,431 bu.
Peaches and nectarines	30,333 trees	16,096 bu.
Pears	15,038 trees	6,779 bu.
Plums and prunes	2,423 trees	823 bu.
Cherries	2,657 trees	822 bu.
Quinces	956 trees	412 bu.
Grapes	5,265 vines	72,849 lbs.
Small fruits	385 acres	563,395 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,513	2,395

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	4,997	4,785
Cattle	7,163	6,735
Sheep	1,391	1,594
Swine	5,125	5,703
Poultry	610,239	223,559

BEES

	1917	1918
Number of colonies	302	384

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	13,285	14,382	746,531
Oats	2,038	2,557	74,074
Barley	108	102	1,851
Buckwheat	226	421	3,887
Wheat (winter)	3,616	3,259	63,335
Wheat (spring)	49	176	3,412
Rye	1,437	1,671	22,734

	1917 Acres	1918 Acres	1918 Yield
Hay and Forage:			
Alfalfa	688	602	1,318 tons
Other hay	9,414	8,860	12,763 tons
Corn (ensilage)	1,162	943	8,178 tons
Corn (fodder)	....	733	....
Special Crops:			
Field beans	608	722	5,296 bu.
Cabbage	1,119	1.346	29,702 tons
Potatoes	15,188	19,248	3,395,290 bu.
Roots raised for stock food	....	780	....
Canning factory crops	300	222	....
Other vegetables and garden crops	3.316	9,280	....
Fruits:			
Apples	1,290	1,042	14,482 bu.
Peaches	931	1,553	33,264 bu.
Pears	196	310	3,687 bu.
Plums	196	128	4,345 lbs.
Cherries	92	85	5,906 lbs.
Quinces	....	63	102 bu.
Vineyard	31	66	10,055 lbs.
Small fruits	179	279	....

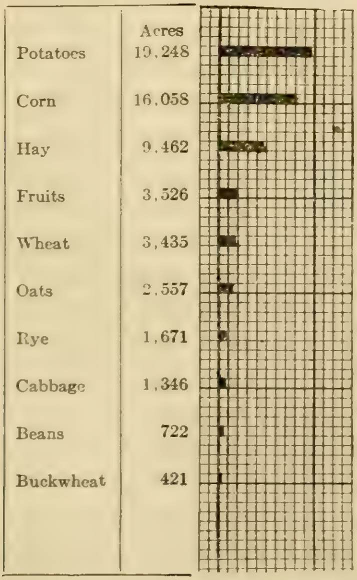


FIG. 152.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN SUFFOLK COUNTY

SULLIVAN COUNTY

Sullivan County is located in the southeastern part of the state, the Delaware River forming its western boundary and separating it from Pennsylvania. The total area is 641,280 acres. From north to south it extends approximately 40 miles, and from east to west 30 miles. The population is shown in the following table:

Population by Towns

(Census of 1915)

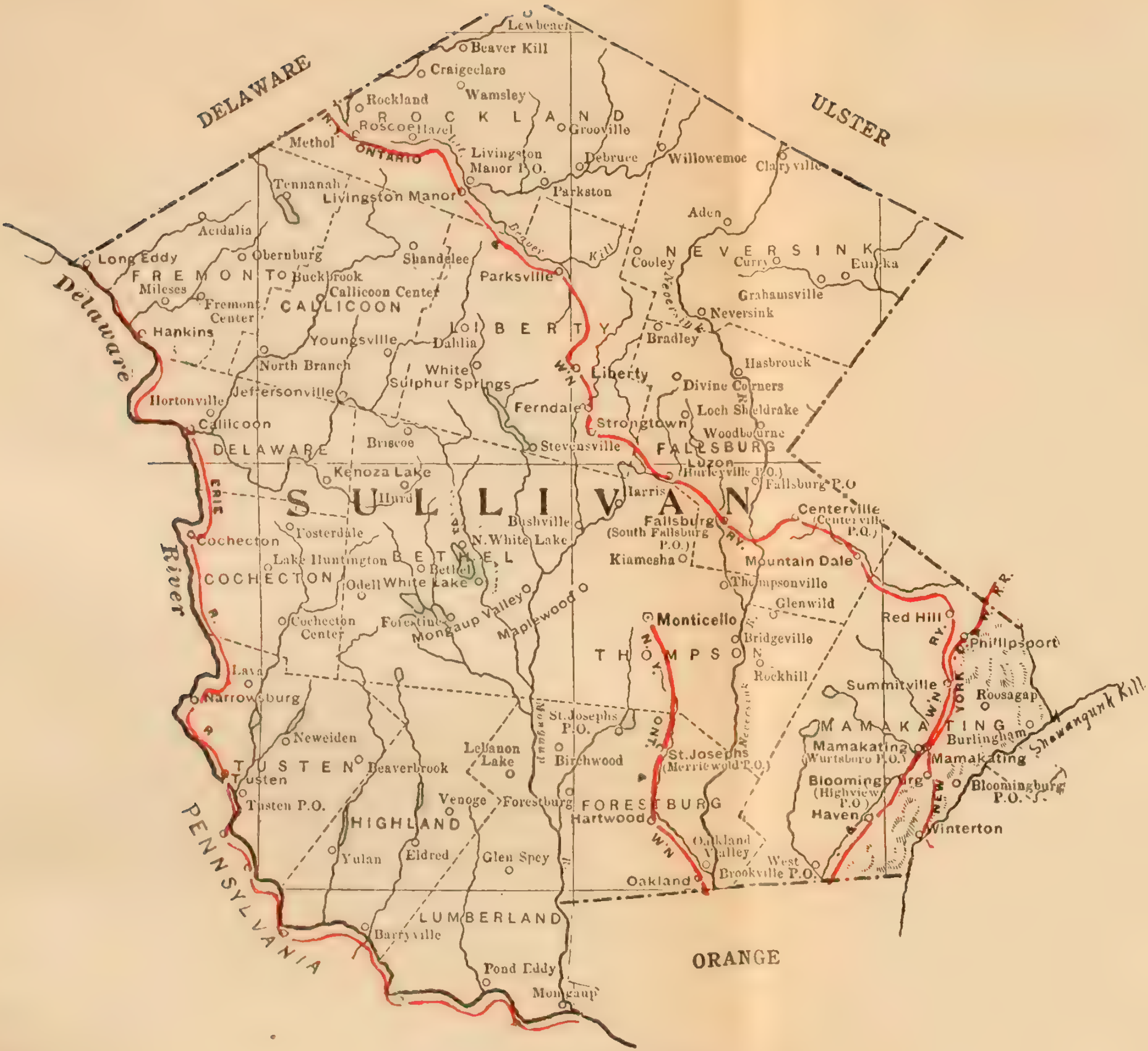
Bethel	2,308	Lumberland	806
Callicoon	2,066	Mamakating	3,104
Cochecton	1,141	Neversink	1,861
Delaware	1,915	Rockland	3,803
Fallsburgh	5,760	Thompson*	4,942
Forestburgh	429	Tusten	901
Fremont	1,771		
Highland	1,043	Total	38,189
Liberty	6,339		

---

* Monticello, in the town of Thompson, is the county seat.

HISTORICAL ASSOCIATIONS

This county was erected from Ulster, March 27, 1809, and named in honor of General John Sullivan. The aborigines of the county were principally Esopus Indians, who were of the Wolf tribe of the Lenni Lênape, or Delaware nation. The early settlers found a road extending southwest from Esopus on the Hudson along the valley north of the Shawangunk Mountains. It was known as the "mine road," and according to tradition was built by a company of miners from Holland before the English conquest of 1664. Two mines are said to have been wrought — one where the mountain approaches the Delaware and the other north of the mountain about half way between the Delaware River and Esopus Creek. With the exception of these traditions the first location of a permanent white inhabitant is said to have been made at about 1700 by Don Manuel Gonzales, a Spaniard, who, having married into a Dutch family, settled in Mamakating Hollow, where he erected a house and raised grain. He opened a trade with the Indians, and other settlers soon followed his example.


Lewbeach
DELAWARE
ULSTER
Beaver Kill
Craigeclare
Wamsley
Rockland
ROCKLAND
Roscoe
Hazel
Grooville
Methol
ONTARIO
Livingston Manor P.O.
Debruce
Willowemoc
Claryville
Tennanah
Livingston Manor
Parkston
Aden
Acidalia
Oberuburg
Shandelee
Beaver Kill
Cooley
NEVERSINK
Curry
Eureka
Long Eddy
FREMONT
Buckbrook
Parksville
Grahamsville
Mileses
Fremont Center
Callicoon Center
CALLICOON
Neversink
Hankins
Youngsville
Dahlia
LIBERTY
Bradley
Delaware
North Branch
White Sulphur Springs
Hasbrouck
Liberty
Divine Corners
Hortonville
Jeffersonville
Ferndale
Loch Sheldrake
Callicoon
Strongtown
Woodbourne
DELAWARE
Briscoe
Stevensville
FALLSBURG
Luzon
Hurleyville P.O.
Kenoza Lake
Fallsburg P.O.
Hurd
Harris
SULLIVAN
ERIE
Bushville
Centerville
Centerville P.O.
Fosterdale
N. White Lake
Fallsburg
South Fallsburg P.O.
Cochecton
Lake Huntington
BETHEL
Bethel
Kiamesha
Mountain Dale
COCHECTON
Odell
White Lake
Thompsonville
Glenwild
River
Cochecton Center
Forestine
Mongaup Valley
Maplewood
Monticello
Red Hill
Phillipsport
Bridgeville
THOMPSON
Lava
Rockhill
Summitville
Narrowsburg
Rousagap
St. Josephs P.O.
MAMAKATING
Burlingham
Shawangunk Kill
Neweiden
Lebanon Lake
Birchwood
St. Josephs
Merriewold P.O.
Mamakating
Wurtsboro P.O.
Mamakating
TUSTEN
Beaverbrook
Bloomingburg
Highview P.O.
Bloomingburg P.O.
Tusten
Venoge
Forestburg
FORESTBURG
Haven
Tusten P.O.
Hartwood
HIGHLAND
Winterton
Oakland Valley
Yulan
Eldred
Glen Spey
West Brookville P.O.
Oakland
PENNSYLVANIA
LUMBERLAND
Barryville
ORANGE
Pond Eddy
Mongaup
N. Y. O. & W. RY.
N. Y. O. & W. R.R.
Mongaup R.
Neversink R.

MAP OF SULLIVAN COUNTY, SHOWING TOWNSHIPS

Red lines indicate railroads

The part of this county south of the south bounds of Callicoon and Bethel is comprised in the Neversink or Minisink Patent conveyed to Mathew Ling and others in 1704. The remainder of the county was a part of the great tract granted to Johannes Hardenbergh and his associates in 1708. Much of the Hardenbergh Patent was settled under long time leases, which led to the anti-rent difficulties that prevailed throughout several counties in this section.

The first impulse to prosperity was given by the Newburgh and Cochecton Turnpike, which was opened in 1808, thus making the county accessible to settlers. Immigrants continued to arrive from New England and the older sections of the state until the completion of the Erie Canal, when the trend of emigration was diverted to the new and fertile lands of the West. Three years later the Delaware and Hudson Canal was completed, which was of great importance to early settlers. This, with the Erie Railroad along the valley of the Delaware, formed the two great works of internal improvement within the county. Previous to the construction of the railway, products reached market only at great expense over mountain roads or were floated down the Delaware to Philadelphia.

DEVELOPMENT OF INDUSTRY

The hemlock forests early led to an extensive industry in tanning sole leather. In 1855 there were about forty tanneries producing over $2,000,000 worth of leather annually, and employing about 750 laborers. At present no tanning is done in the county, but considerable hemlock bark is shipped out for that purpose.

The acid factories, which are located chiefly in the northern part of the county, are doing a large business in manufacturing charcoal, wood alcohol, and acetate of lime.

In some portions of the county reforestation is being practiced. There are many game preserves, and fishing is good in nearly every town in the county. On account of its natural scenic beauty and its numerous lakes, the county has many attractions for vacationists.

The chief live stock industry is dairying. The stock is of a much higher grade than that kept in former years, and pure-bred sires are to be found in nearly every community. Holsteins and Jerseys are most numerous. Sheep are not so widely kept as they were twenty-five years ago. Within the last two years, however, interest in them has been revived, and new flocks have been established. The poultry industry is one of considerable importance, the white Leghorn breed being the most prominent. Records have been made of a production of 281 eggs per year.

The leading farm crops are hay, oats, and potatoes.

CLIMATE AND RAINFALL

In Sullivan County the meteorological station is located at Jeffersonville, 1,240 feet above sea level. The present observer is Charles Wilfert, jr.

Average dates for the last killing frost in spring and the first in fall are May 16 and September 25, respectively, giving a growing season of 132 days.

The following table covers the period 1903 to 1918:

RECORD OF TEMPERATURE AND PRECIPITATION AT JEFFERSONVILLE

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	23.0	63	1906	—34	1907	3.07	1.60	1913	10.6
February.....	20.3	58	1915	—29	1918	2.83	1.85	1914	12.1
March........	31.6	82	1905	—15	1907	3.10	1.87	1913	10.6
April.........	44.8	91	1915	15	1908	3.25	1.47	1904	1.7
May.........	56.1	96	1911	20	1911*	2.80	1.30	1914	T.
June.........	63.3	94	1908	32	1912*	3.45	1.84	1911	......
July..........	68.4	99	1911	35	1909	4.24	3.90	1904	......
August.......	66.3	99	1918	35	1912*	4.10	2.52	1917	......
September....	59.9	91	1914*	23	1904	3.40	2.26	1908	......
October......	49.3	90	1903	17	1904	3.61	4.45	1903	0.5
November....	36.6	78	1909	—1	1914	2.38	3.04	1913	4.1
December....	25.7	68	1914	—27	1917	3.02	2.05	1915	10.7
Year.........	45.4	99	1918*	—34	1907	39.25	4.45	1903	50.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is generally very hilly, mountains rising along the east border. The south and west consists chiefly of ridges separated by narrow ravines. In the middle and north it assumes the character of a rolling plateau. Near the northern border of the county the southern slopes of the Catskills divide the waters flowing into the Hudson and Delaware rivers. From this elevated portion numerous ridges extend toward the Delaware, giving the county a general southerly inclination. The highest points of the county are the hills in the town of Rockland, estimated to be from 2,100 to 2,400 feet above tide. The lowest point in the county is on the Delaware at the mouth of the Mongaup, which has an elevation of 550 feet above tide.

With the exception of a small district on the east border, this county is drained by the Delaware and its branches, most of these streams being very rapid. In the valleys and forests are about 100 small lakes which form peculiar and attractive features in the scenery.

The soil is mostly a reddish loam mixed with gravel, and is generally stony. The southeastern portion contains sections of clay.

DESCRIPTION BY TOWNSHIPS

BETHEL: The surface is broken and hilly, and many of the slopes are steep and rocky. It is watered by a number of small streams, mostly tributaries of the Mongaup River. It has many small lakes, including White Lake, which is especially noted for its scenery. The soil is a sandy and gravelly loam, occasionally intermixed with clay. While this is one of the best agricultural townships in the county it also holds many attractions for summer boarders.

Products: Dairy products, hay, and poultry.

Average values of farm land range from $20 to $50 an acre.

CALLICOON: The surface contains numerous valleys of streams flowing into the Delaware, many of them being narrow ravines of the hills rising in steep declivities 200 to 600 feet above them. The soil is mostly a sandy loam.

Products: Dairy products, buckwheat, rye, hay, potatoes and oats.

Average values of farm land range from $25 to $40 an acre.

COCHECTON: Ridges of hills with narrow valleys between them occupy the entire surface. The streams are tributaries of the Delaware. The soil is mostly a gravelly loam best adapted to pasturage.

Products: Poultry, dairy products, hay, rye, oats and potatoes.

Average values of farm land range from $20 to $40 an acre.

Delaware: The surface is hilly, broken by the narrow valleys of small streams. The soil is mostly a gravelly loam.

Products: Dairy products, hay, rye, oats and potatoes.

Average values of farm land range from $20 to $40 an acre.

Fallsburgh: The surface is hilly and rolling and drained by the Neversink and its branches. The soil is a gravelly loam. This town is a favorite resort for summer boarders.

Products: Dairy, poultry, hay, rye and oats.

Average values of farm land range from $20 to $40 an acre.

Forestburgh: The surface is broken by the high ridges between Neversink and Mongaup rivers. The average elevation is about 1,400 feet above tide. The greater part of the town is covered with forest and contains large game preserves with an abundance of fish, deer, and other game.

Average values of farm land range from $10 to $35 an acre.

Fremont: The surface is broken and hilly, the summits rising from 1,500 to 1,800 feet above tide. A number of small streams flow through the town. Draft colts are raised in limited numbers.

Products: Hay, rye, oats, potatoes, buckwheat, and dairy products.

Average values of farm land range from $25 to $40 an acre.

Highland: The surface consists of high ridges between the Delaware and Mongaup rivers, rising from 1,200 to 1,600 feet above tide. There are a great number of small lakes in the town and a large part of it is covered with forest, including several game preserves.

Average values of farm land range from $10 to $35 an acre.

Liberty: The surface is rough and broken, higher in the north, where there are elevations of from 1,400 to 1,700 feet above tide. This is one of the best agricultural townships in the county. It is also a favorite resort for vacationists.

Products: Dairy products, hay and poultry.

Average values of farm land range from $20 to $50 an acre.

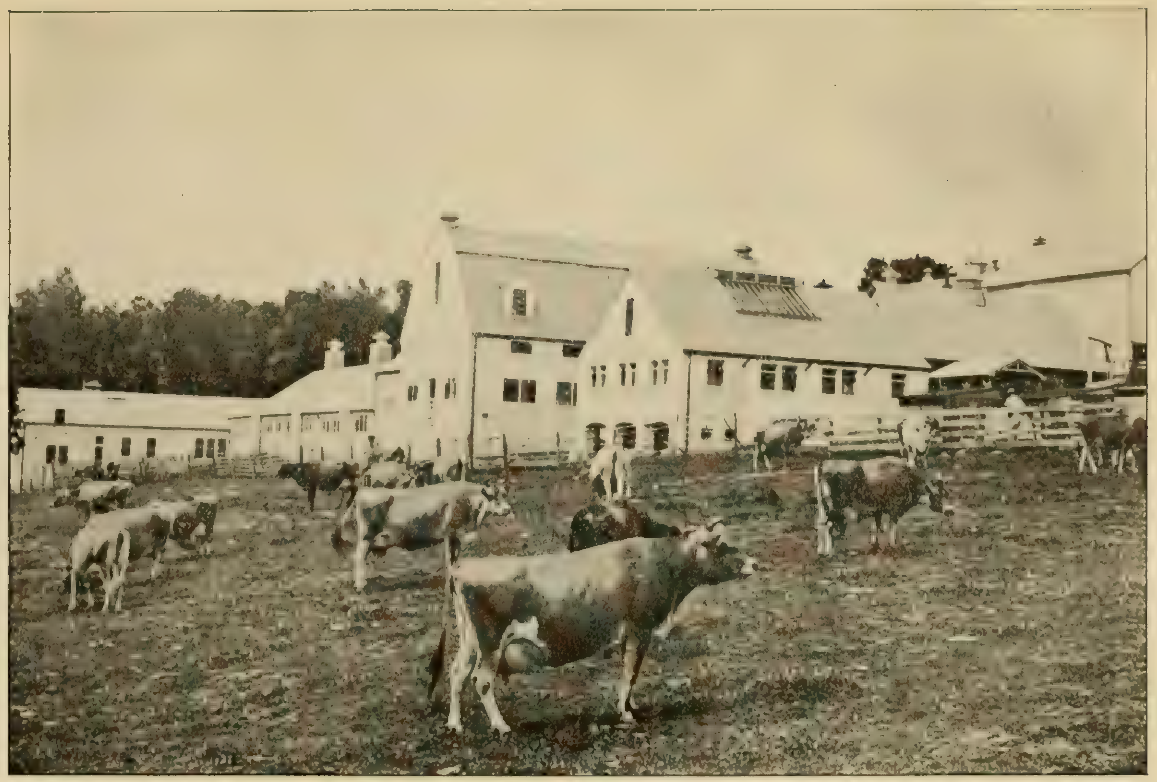


Fig. 153.— The Exercising Field, Brookwood Farms

LUMBERLAND: The surface is rugged and broken, and is practically covered with forest, which include several large game preserves.

Average values of farm land range from $10 to $35 an acre.

MAMAKATING: The surface is occupied by the highlands between Neversink and Shawangunk creeks. The soil is a sandy and gravelly loam, in some places intermixed with clay.

Products: Dairy products, hay, oats and potatoes.

Average values of farm land range from $10 to $50 an acre.

NEVERSINK: The surface is very hilly. It is watered by the Neversink and its branches and by the Lackawanna or west branch of the Rondout Creek. The soil is generally a gravelly loam. Farming is done on a small scale, in most cases products being only about sufficient to maintain a family.

Average values of farm land range from $10 to $35 an acre.

ROCKLAND: The surface is very hilly. A chain of small lakes that extend through the town affords many attractions for summer visitors. Acid manufacturing is a prominent industry.

Products: Hay, rye, oats, potatoes, and beans.

Average values of farm land range from $20 to $40 an acre.

THOMPSON: While this town lies on the highlands between Neversink and Mongaup rivers, it is less hilly than most of the towns in the county. These two rivers, with several small lakes and streams, constitute the waters of the town. The soil is a reddish loam.

Products: Dairy products, poultry, rye and oats.

Average values of farm land range from $20 to $40 an acre.

TUSTEN: The western and southern parts of this town are very hilly and the eastern portion is occupied by a plateau. The soil is a gravelly loam.

Products: Poultry, rye, buckwheat, oats and lumber.

Average values of farm land range from $20 to $40 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Erie Railroad extends through the Delaware River valley the entire length of the western and southern borders of Sullivan

County. On the southern border, however, the track lies on the Pennsylvania side of the river.

The New York, Ontario and Western connects with the Erie at Port Jervis in the southeastern part of the county and extends northeast to Kingston, a branch extending from Valley Junction to Monticello. The first line of this road connects at Wurtsboro and Summitville with another line of the same road extending from Cornwall, Orange County, northwest through Sullivan County, finally terminating at Oswego.

Improved Highways

An improved highway leading from New York City across the southern part of the state crosses Sullivan County from southeast to northwest, passing through Monticello and Liberty. From Monticello an improved highway leads west to Fosterdale, where it turns north to Kenoza Lake; here it is joined by a road from Liberty, and extends to Callicoon Depot on the west border of the county.

There are in the county 77 miles of completed improved highways, 20 miles additional being under construction.

AVAILABLE MARKETS

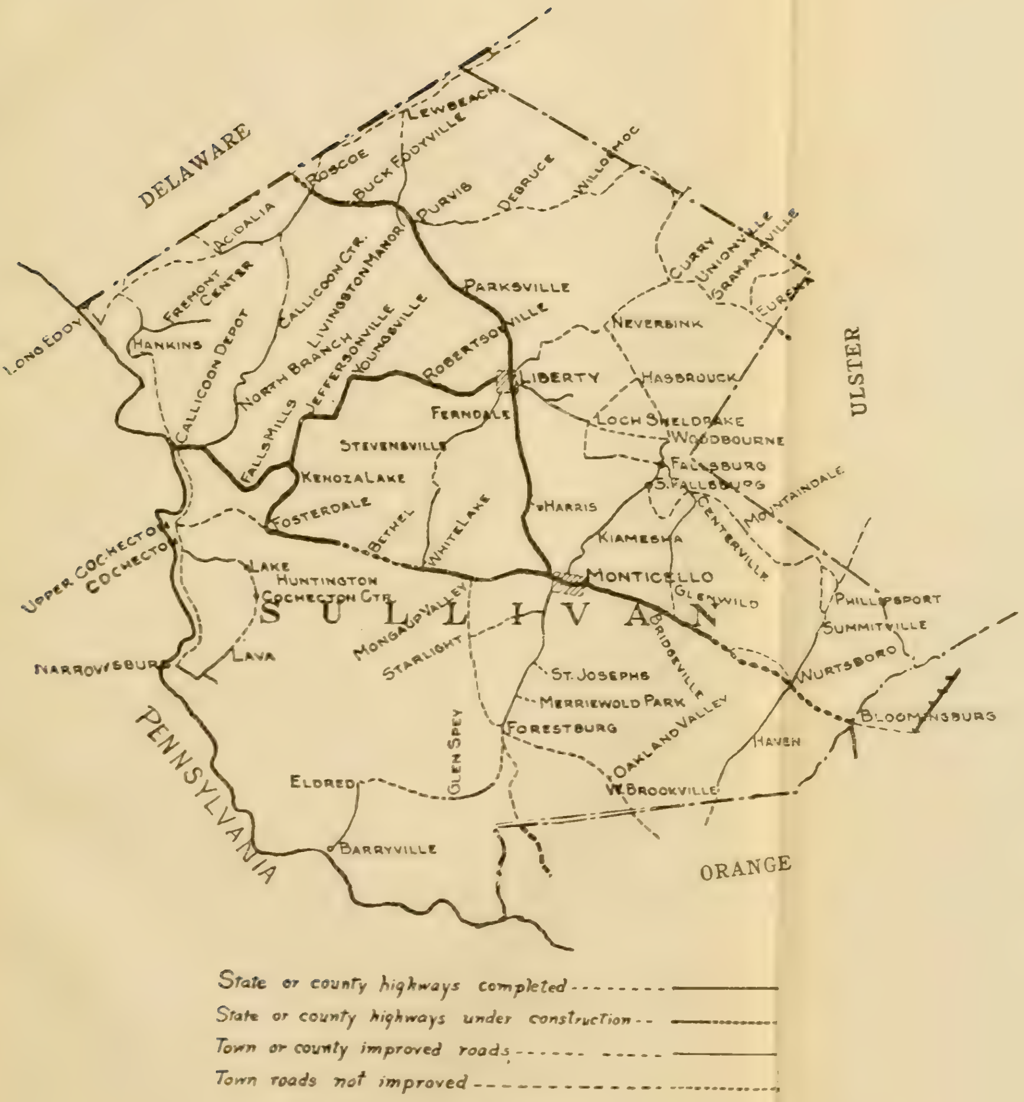
An excellent home market for farm produce is found in the demands of the boarding business of Sullivan County, which is very active during the summer months. More than 100,000 summer people visit the county annually, and prices received frequently exceed New York quotations.

Next best to the home market is that of New York City, which is about 100 miles distant, and to which both dairy and poultry products are shipped.

Fully three-fourths of the milk produced is sold as market milk and cream. The manufactured products include creamery butter, American cheese, and some Italian and Greek cheese and condensed milk.

The agricultural organizations are as follows:

Associated Poultry Breeders of Liberty.
Associated Poultry Breeders of Narrowsburg.
Central Sullivan Farmers' Cooperative Association, Inc.
Clarksville Farmers' Cooperative Company, Inc.
Farmers' Cooperative Creamery.
Farmers' Cooperative Feed and Produce Company, Inc.


DELAWARE
ULSTER
ORANGE
PENNSYLVANIA
SULLIVAN
LEWBEACH
FODYVILLE
ROSCOE
BUCK
PURVIS
DEBRUCE
WILLOWEMOC
ACIDALIA
FREMONT CENTER
LONG EDDY
HANKINS
CALLICOON DEPOT
CALLICOON CTR.
LIVINGSTON MANOR
NORTH BRANCH
JEFFERSONVILLE
YOUNGSVILLE
FALLS MILLS
PARKSVILLE
ROBERTSONVILLE
CURRY
UNIONVILLE
GRAHAMSVILLE
EUREKA
NEVERSINK
HASBROUCK
LIBERTY
FERNDALE
LOCH SHELDRAKE
WOODBOURNE
FALLSBURG
S. FALLSBURG
MOUNTAINDALE
STEVENSVILLE
KENOZA LAKE
FOSTERDALE
BETHEL
WHITE LAKE
HARRIS
KIAMESHA
CENTERVILLE
UPPER COCHECTON
COCHECTON
LAKE HUNTINGTON
COCHECTON CTR.
MONGAUP VALLEY
MONTICELLO
GLENWILD
PHILLIPSPORT
SUMMITVILLE
BRIDGEVILLE
STARLIGHT
LAVA
NARROWSBURG
ST. JOSEPHS
MERRIEWOLD PARK
WURTSBORO
BLOOMINGSBURG
FORESTBURG
OAKLAND VALLEY
HAVEN
GLEN SPEY
ELDRED
W. BROOKVILLE
BARRYVILLE
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

MAP SHOWING IMPROVED HIGHWAYS

Ferndale and Stevensville Farm Produce Company, Inc.
First Orange County National Farm Loan Association.
Granges: Pomona and 18 subordinate granges.
Liberty Farm and Garden Club.
Long Eddy Farmers' Cooperative Association, Inc.
Mamakating Farmers' League.
Mountain National Farm Loan Association of Luzon.
Roscoe Cooperative Creamery Company, Inc.
Sullivan County Agricultural Society.
Sullivan County Cooperative Association.
Sullivan County Dairymen's League.
Sullivan County Farm Bureau Association.
Thompson Farm and Garden Club.
Woodridge Farmers' Cooperative Creamery, Inc.

EDUCATIONAL FACILITIES

Approved courses in agriculture are given at Callicoon, Jeffersonville, Liberty, Livingston Manor, Monticello, and Youngsville. Courses in home making are also given at Jefferson, Livingston Manor, and Monticello.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Bloomingburg, Callicoon, Youngsville, Jeffersonville, Liberty, Livingston Manor, Long Eddy, Monticello, and Roscoe.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	451,216 acres
Number of farms	3,851
Per cent of farm land improved	42.7

LIVE STOCK PRODUCTS

Milk sold	3,951,576 gal.
Cream sold	3,267 gal.
Butter fat sold	302,822 lbs.
Butter produced	670,541 lbs.
Cheese produced	6,555 lbs.
Eggs produced	1,475,541 doz.
Wool produced	2,685 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	7,215
Cattle	35,814
Sheep	6,558
Swine	7,462
Poultry	200,742

	Number
BEES	
Number of colonies	2,570

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	4,632	146,600 bu.
Oats	5,969	138,200 bu.
Wheat	14	247 bu.
Barley	51	1,091 bu.
Buckwheat	5,091	96,033 bu.
Rye	1,715	23,532 bu.
Hay and forage	73,028	62,063 tons
Special Crops:		
Potatoes	3,312	259,461 bu.
Vegetables, other than potatoes	803	....
Dry edible beans	8	135 bu.
Dry peas	4	55 bu.
Fruits:		
Apples	159,258 trees	315,058 bu.
Peaches and nectarines	3,382 trees	1,809 bu.
Pears	6,762 trees	4,227 bu.
Plums and prunes	2,811 trees	702 bu.
Cherries	1,730 trees	399 bu.
Quinces	99 trees	18 bu.
Grapes	3,593 vines	61,549 lbs.
Small fruits	22 acres	38,554 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,523	3,697
LIVE STOCK AND POULTRY		
Horses and mules	10,390	6,813
Cattle	34,164	33,258
Sheep	3,129	2,912
Swine	4,357	4,611
Poultry	764,721	229,761
BEES		
Number of colonies	980	912

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	3,082	3,290	60,547 bu.
Oats	8,769	6,642	166,441 bu.
Barley	26	108	503 bu.
Buckwheat	3,122	4,036	39,763 bu.
Wheat (winter)	141	113	1,434 bu.
Wheat (spring)	44	57	454 bu.
Rye	1,989	1,618	18,820 bu.
Hay and Forage:			
Alfalfa	175	166	366 tons
Other hay	72,677	62,539	66,238 tons
Corn (ensilage)	2,846	2,349	12,919 tons
Corn (fodder)	....	970	....
Special Crops:			
Field beans	144	188	1,427 bu.
Cabbage	133	203	465 tons
Potatoes	5,679	3,464	238,827 bu.
Roots raised for stock food	....	107	....
Canning factory crops	15	22	....
Other vegetables and garden crops	1,414	950	....
Fruits:			
Apples	3,985	3,909	78,648 bu.
Peaches	54	4	718 bu.
Pears	54	6	1,458 bu.
Plums	16	1	4,696 lbs.
Cherries	11	4	1,902 lbs.
Vineyard	14	22	8,230 lbs.
Small fruits	180	64	....

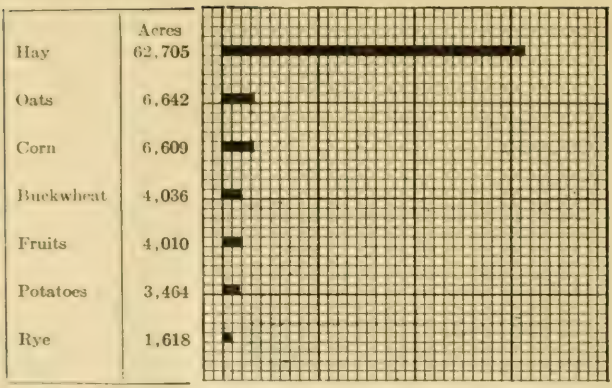
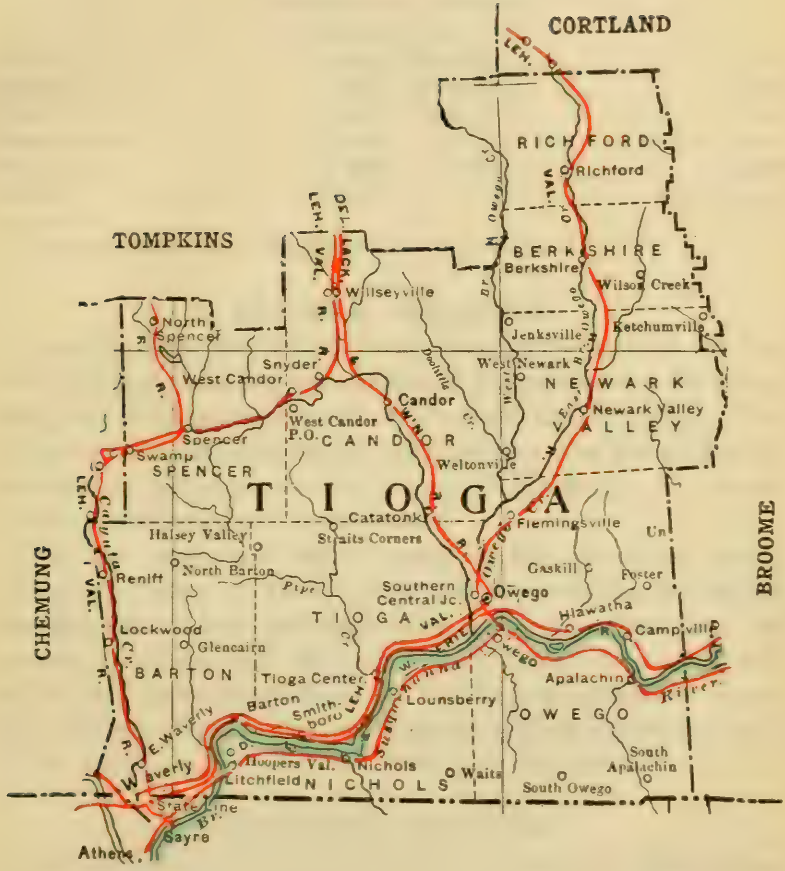


FIG. 154.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN SULLIVAN COUNTY


CORTLAND
TOMPKINS
CHEMUNG
BROOME
TIOGA
RICHFORD
Richford
BERKSHIRE
Berkshire
Wilson Creek
Ketchumville
Jenksville
West Newark
NEWARK VALLEY
Newark Valley
Weltonville
CANDOR
Candor
West Candor P.O.
Willseyville
Snyder
West Candor
North Spencer
Spencer
Swamp
SPENCER
Catatonk
Straits Corners
Halsey Valley
North Barton
Renift
Lockwood
Glencairn
BARTON
Tioga Center
Barton
Smithboro
E. Waverly
Waverly
Hoopers Val.
Litchfield
State Line
Sayre
Athens
NICHOLS
Nichols
Waits
Lounsberry
OWEGO
Owego
Southern Central Jc.
Flemingsville
Gaskill
Foster
Hiawatha
Campville
Apalachin
South Apalachin
South Owego
Un
LEH.
VAL.
R.
DEL. LACK.
W.
Owego Cr.
West Br. Owego Cr.
Doolittle Cr.
Cayuta Cr.
Pipe Cr.
Susquehanna
River
ERIE
Br.

Map of Tioga County, Showing Townships
Red lines indicate railroads

TIOGA COUNTY

Tioga County lies in the south central part of the state. It has an area of 332,800 acres. Its average extent from north to south is approximately 20 miles, and from east to west 22 miles. The population by townships is shown in the following table:

Population by Townships

(Census of 1915)

Barton	6,682	Richford	913
Berkshire	875	Spencer	1,205
Candor	2,896	Tioga	2,004
Newark Valley	1,975		
Nichols	1,533	Total	25,549
Owego*	7,466		

---

* Owego, in the town of Owego, is the county seat.

HISTORICAL ASSOCIATIONS

Tioga County was formed from Montgomery in 1791. At that time it included the present counties of Tioga, Broome, Chemung, and parts of Schuyler, Tompkins, Cortland, and Chenango. The name was derived from that of the river that once flowed through its western portion, now the county of Chemung. It was an Indian name meaning " at the forks."

The first permanent settler located on the site of the present village of Owego, in 1785. This section became known during the Revolution, and very soon after its close settlers from the eastern states arrived, the first coming before the Indian title to the land was extinguished. It thus happened that the county was well populated with New England settlers before the lands in the western part of the state were open to settlement.

DEVELOPMENT OF INDUSTRY

The earliest settlers began at once to raise corn. The Indians watched and cared for its growth during the season, and received a share for their labor in the harvesting. Lumbering and tanning were important for many years. There were also numerous saw and flour mills. As the land was cleared agricultural pursuits developed; grains were cultivated on the lowlands, while the uplands were devoted to stock and wool growing and dairying. At the present time dairy products and eggs are the chief money crops. The products are similar throughout the various towns. In addition to dairy and poultry products, there are generally produced hay, oats, buckwheat, corn, pototaes, wheat, rye, barley, and beans. Tobacco is grown along the Susquehanna River.

CLIMATE AND RAINFALL

Climatological records for Tioga County have been taken from the Waverly station, the elevation of which is 824 feet.

Average dates for the last killing frost in spring and the first in fall are May 11 and October 3, respectively, giving a growing season of 145 days.

The following table summarizes records made during a period of 33 years extending from 1882 to 1915:

RECORD OF TEMPERATURE AND PRECIPITATION AT WAVERLY

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	24.1	71	1906	—31	1904	2.32	1.88	1915	11.6
February.....	23.7	65	1906	—25	1914	2.06	2.10	1914	12.4
March........	32.9	86	1905	—17	1900	2.69	2.74	1900	9.2
April.........	45.6	90	1902*	12	1894	2.80	2.38	1898	3.4
May.........	58.0	97	1911	20	1903	3.36	2.68	1893	0.1
June.........	66.4	98	1908	28	1913	3.50	2.62	1913	......
July..........	70.5	102	1894	35	1909	3.67	2.10	1905	......
August.......	67.7	101	1900	33	1907	3.42	3.46	1889	......
September....	61.7	97	1900*	23	1904	3.08	3.21	1893	......
October......	49.8	91	1900	15	1904	2.95	2.28	1896	0.2
November....	38.5	76	1909	6	1914	2.25	2.32	1900	3.6
December.....	28.3	69	1914*	—25	1914	2.45	2.75	1901	11.5
Year.........	47.3	102	1894	—31	1904	34.55	3.46	1889	52.0

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is broken by ridges extending northerly through the county from Pennsylvania. The summits of these ridges have a nearly uniform elevation of 1,200 to 1,600 feet above tide. The valley of the Susquehanna cuts them diagonally, and numerous lateral valleys extend in a general north and south direction from the river, separating the ridges and giving a great variety to the surface. These valleys vary in width from a few rods to a mile or more, and are generally bordered by steep declivities. The summits of the hills are generally broad and rolling, although in a few places they are broken and rocky.

The principal streams are Susquehanna River and Owego, Catatonk, Cayuta, Pipe, and Appalachin creeks and their branches. The creeks generally have rapid currents, though few waterfalls. Their valleys are usually narrow and rocky in their upper courses, expanding toward the Susquehanna into broad, level intervales, which are especially noted for their fertility.

The soil in the valleys is generally a deep, rich, gravelly loam, with an occasional intermixture of clay and sand. The uplands are gravelly and sandy, moderately fertile.

DESCRIPTION BY TOWNSHIPS

BARTON: The surface is generally hilly, a small portion of level land lying along the southern border. The highlands on the west rise abruptly from the valley of Cayuta Creek, and are divided by the valley of Ellis Creek. Their summits are broad and rolling, the highest points being 400 to 600 feet above the river. The soil in the valleys is a rich alluvium, on the hills it is a sandy or gravelly loam.

Products: Milk, buckwheat, oats, potatoes and eggs.
Average values of farm land range from $25 to $60 per acre.

BERKSHIRE: The surface is mostly a hilly and broken upland, with an average elevation of 1,200 to 1,600 feet above tide. The streams are the east and west branches of Owego Creek and their tributaries. The soil in the valleys is a sandy and gravelly loam, and on the hills it is clay and hardpan.

Products: Milk, potatoes, buckwheat, eggs and live stock.
Average values of farm land range from $25 to $60 per acre.

CANDOR: The surface consists of high, broad, rolling uplands separated into ridges by the narrow valleys of streams, which flow generally south. The valley of Catatonk Creek divides the western ridge into two parts. The soil is a gravelly loam, fertile in the valleys, but only moderately productive on the hills.

Products: Milk, hay, buckwheat, potatoes and eggs.

Average values of farm land range from $20 to $50 per acre.

Newark Valley: The surface is mostly a hilly upland region with an average elevation of 1,200 to 1,500 feet above tide. The east branch of Owego Creek flows through near the center of the town. The soil in the valleys is a fine gravelly loam. On the hills it is moderately fertile.

Products: Milk, potatoes, live stock and eggs.

Average values of farm land range from $25 to $65 per acre.

Nichols: The surface, with the exception of the broad Susquehanna valley on the north, is mostly an upland broken by the narrow valleys of small streams. The summits of the hills are broad, and rise 1,200 to 1,600 feet above sea level. In the valleys the soil is a gravelly loam, and very productive. On the hills it is a moderately fertile, gravelly, clayey loam underlaid by red sandstone.

Products: Milk, hay, potatoes and oats; wheat is also important.

Average values of farm land range from $25 to $70 per acre.

Owego: The surface is mostly upland, separated into two distinct parts by the Susquehanna River, and broken by the narrow valleys of small creeks. The summits of the ridges are broad and rolling, and rise 1,200 to 1,600 feet above the river. The intervale along the river in some places is an unbroken flat more than a mile in width. The soil is principally a gravelly loam.

Products: Milk, potatoes, hay, eggs and tobacco.

Average values of farm land range from $20 to $70 per acre.

Richford: The surface is mostly upland broken by a few narrow valleys. In the northwestern part is the highest land in the county, the greatest elevations being 2,000 feet above tide. The streams are the head branches of Owego Creek. The soil is a moderately fertile gravelly loam.

Products: Milk, potatoes, hay, and poultry products.

Average values of farm land range from $15 to $40 per acre.

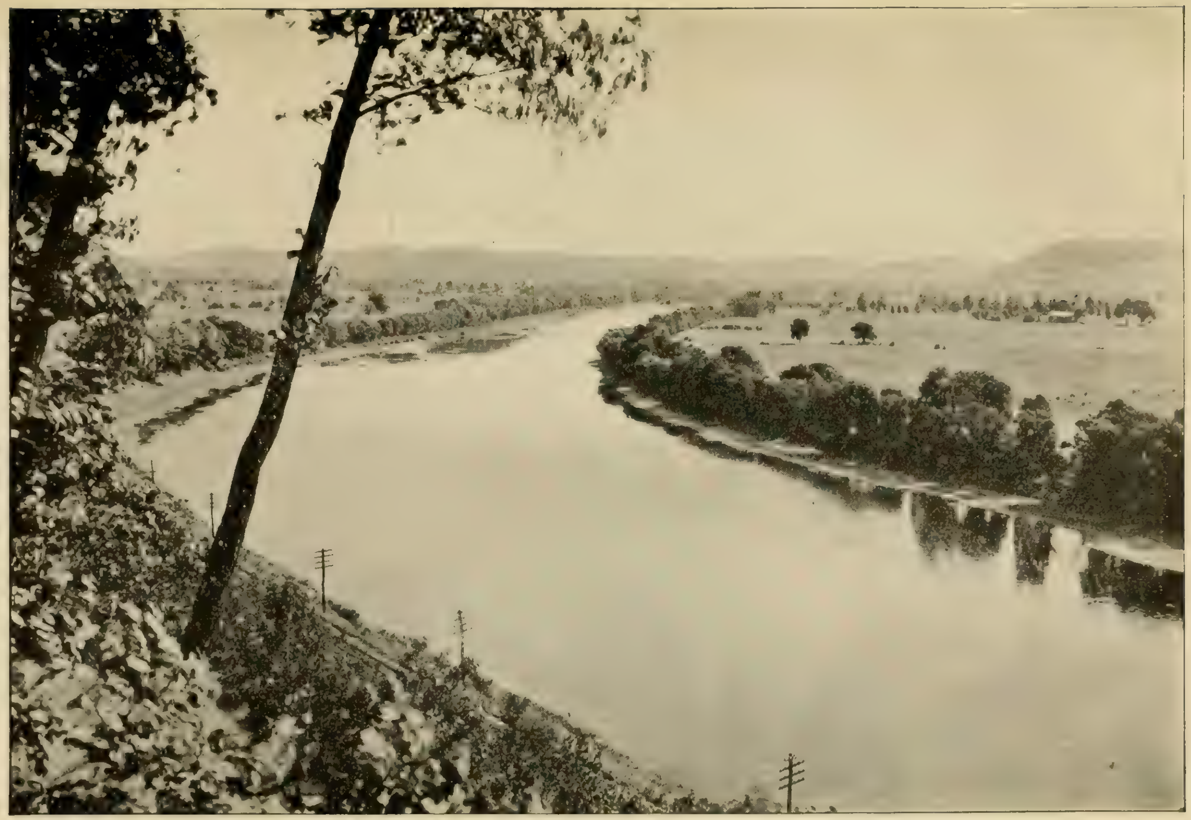


FIG. 155.— SUSQUEHANNA RIVER AND VALLEY, THREE MILES FROM OWEGO

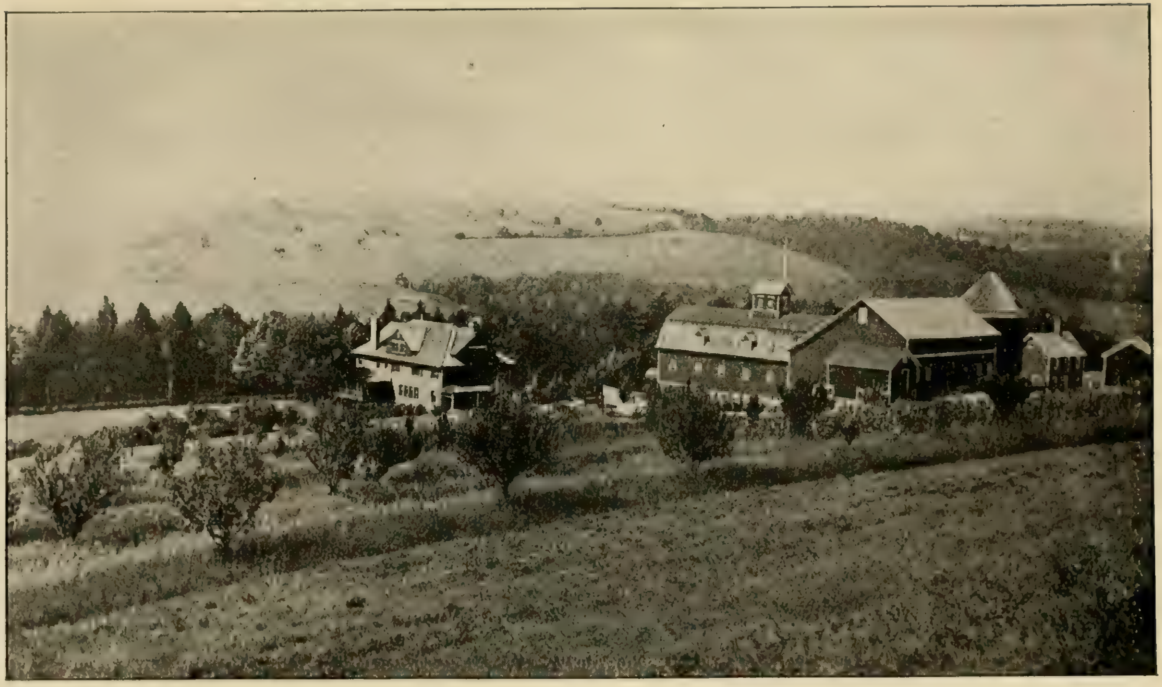


FIG. 156.— FARM VIEW NEAR SMITHBORO

SPENCER: The surface is an upland 1,200 to 1,600 feet in height, broken by the valleys of small streams. The northwest portion forms the watershed between Susquehanna River and Cayuga Creek. The ridges, which extend generally north and south, have steep declivities and broad, broken summits. Catatonk Creek, flowing east, breaks through these ridges in a deep, narrow valley. The soil in the valleys is a gravelly loam; on the hills it is a hard shaly loam.

Products: Milk, hay, oats, buckwheat and eggs.
Average values of farm land range from $20 to $50 per acre.

TIOGA: The surface is principally upland, terminating in bluffs along the Susquehanna River intervale on the southeast. The streams are Catatonk and Pipe creeks and numerous smaller creeks and brooks. The soil is a fine dark loam in the valleys and a gravelly loam on the hills.

Products: Milk, potatoes, hay, and poultry products.
Average values of farm land range from $20 to 70 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Auburn branch of the Lehigh Valley Railroad from Lake Ontario to Sayre, Pennsylvania, passes through the entire length of the county from north to south. At Sayre it connects with the main line of the same railroad running from Buffalo to New York and Philadelphia.

Another line of the Lehigh Valley Railroad, running from Elmira through Ithaca, Cortland, and to Canastota, on the New York Central Railroad, passes through the town of Spencer and Candor in the northern part of the county. The main line of the same railroad runs through Waverly and the western part of the county.

The main lines of the Delaware, Lackawanna and Western Railroad, and the Erie Railroad run, one on the north and the other on the south side of the Susquehanna River from east to west through the entire length of the county.

A branch of the Delaware, Lackawanna and Western Railroad connects the main line at Owego with Ithaca. This branch, which received the second charter granted in New York State, was built to connect the Susquehanna River with Cayuga Lake.

Electric Roads

An electric road to Elmira extends from Waverly in the southwestern part of the county, another line running from Waverly to Athens in Pennsylvania.

Improved Highways

The trunk line of macadam road from New York to Buffalo passes through the county along the line of the Susquehanna River, a branch leading from Owego to Ithaca. State and county macadam roads also run through the valley from Owego north through Newark Valley, Barker, and Richford to Ithaca, Cortland, Auburn, and Syracuse.

The total completed improved highways equal 66 miles, with 12 miles still under construction.

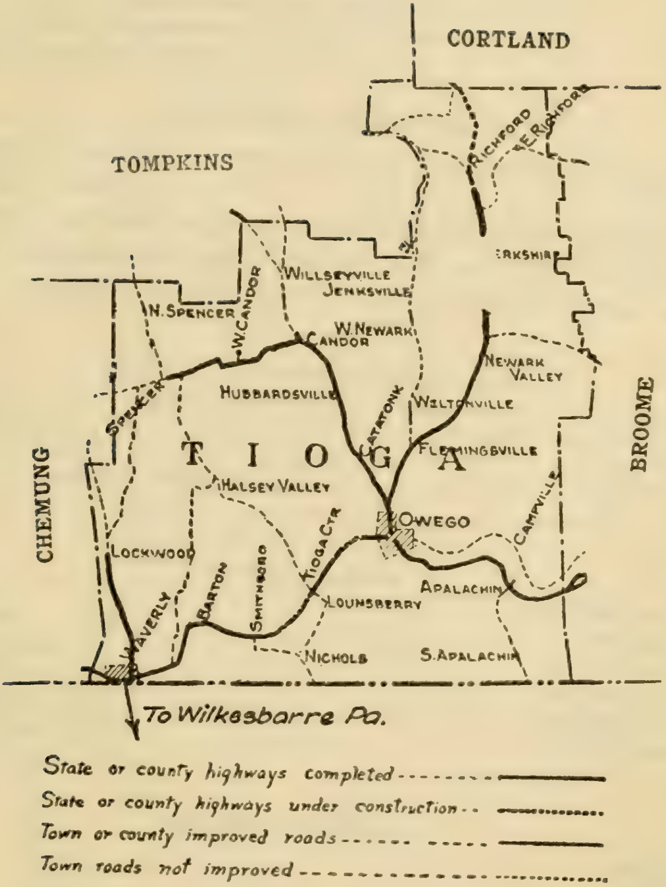
AVAILABLE MARKETS

The principal local markets are Waverly and Sayre, and the neighboring point of Athens, in Pennsylvania, with a total population of about 10,000. Other markets are Owego village, and, for the eastern part, the city of Binghamton.

Scranton and Pittsburgh furnish excellent markets for potatoes, cabbage, hay, and buckwheat. Train loads of milk are sent daily over the Lehigh railroad to New York and Philadelphia and over the Erie and Lackawanna to New York. Fully three-fourths of the milk produced is sold as market milk. Manufactured dairy products include 1¼ million pounds of condensed milk and some whole milk cheese.

The agricultural organizations are as follows:

Berkshire Poultry Association.
Berkshire Cooperative Dairymen's Association, Inc.
Big Island Community Club.
Chemung County National Farm Loan Association.
First Tioga Dairy Improvement Association.
Granges: Pomona and 8 subordinate granges.
Northern Tioga Agricultural Society.


CORTLAND
TOMPKINS
RICHFORD
E. RICHFORD
BERKSHIRE
WILLSEYVILLE
JENKSVILLE
N. SPENCER
W. CANDOR
W. NEWARK
CANDOR
NEWARK VALLEY
HUBBARDSVILLE
CATATONK
WILTONVILLE
SPENCER
T I O G A
FLEMINGSVILLE
BROOME
CHEMUNG
HALSEY VALLEY
OWEGO
CAMPVILLE
LOCKWOOD
TIOGA CTR
SMITHBORO
BARTON
APALACHIN
LOUNSBERRY
WAVERLY
NICHOLS
S. APALACHIN
To Wilkesbarre Pa.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Spencer Women's Farm Bureau Round-up Club.
Tioga County Agricultural Society.
Tioga County Beekeepers' Cooperative Association, Inc.
Tioga County Dairymen's League.
Tioga County Farm Bureau Association.
Tioga County Holstein-Friesian Breeders' Association.
Tioga County National Farm Loan Association.
Tioga County Sheep Breeders' Cooperative Association, Inc.
Waverly Poultry Association.

EDUCATIONAL FACILITIES

Approved courses in agriculture and home making are given at Newark Valley.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Appalachin, Berkshire, Candor, Newark Valley, Nichols, Owego, and Waverly.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	298, 463 acres
Number of farms	2, 844
Per cent of farm land improved	76.2

LIVE STOCK PRODUCTS

Milk sold	6, 727, 559 gal.
Cream sold	2, 950 gal.
Butter fat sold	328, 059 lbs.
Butter produced	189, 622 lbs.
Eggs produced	1, 060, 400 doz.
Wool produced	6, 953 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	6, 619
Cattle	26, 913
Sheep	13, 093
Swine	4, 632
Poultry	158, 031

BEES

Number of colonies	2, 820

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	4,535	141,680 bu.
Oats	17,185	353,398 bu.
Wheat	962	20,924 bu.
Barley	308	4,879 bu.
Buckwheat	13,059	278,328 bu.
Rye	1,508	21,591 bu.
Hay and forage	64,560	80,889 tons
Special Crops:		
Potatoes	5,960	729,523 bu.
Vegetables, other than potatoes	599	....
Dry edible beans	22	439 bu.
Dry peas	4	78 bu.
Fruits:		
Apples	76,203 trees	90,324 bu.
Peaches and nectarines	4,965 trees	2,001 bu.
Pears	6,596 trees	4,942 bu.
Plums and prunes	5,507 trees	2,253 bu.
Cherries	7,279 trees	2,031 bu.
Quinces	35 trees	4 bu.
Grapes	2,607 vines	56,413 lbs.
Small fruits	75 acres	127,480 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,544	2,388
LIVE STOCK AND POULTRY		
Horses and mules	6,527	5,798
Cattle	26,577	24,379
Sheep	6,993	5,484
Swine	3,167	2,868
Poultry	176,486	137,108
BEES		
Number of colonies	1,885	2,301

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	1,953	2,158	40,005 bu.
Oats	15,233	14,851	390,425 bu.
Barley	383	401	5,246 bu.
Buckwheat	10,789	8,756	104,263 bu.
Wheat (winter)	1,516	1,563	22,789 bu.
Wheat (spring)	62	128	1,985 bu.
Rye	1,104	1,108	11,880 bu.
Hay and Forage:			
Alfalfa	334	284	768 tons
Other hay	59,476	54,637	55,999 tons
Corn (ensilage)	6,302	4,484	31,316 tons
Corn (fodder)	....	1,093	....
Special Crops:			
Field beans	266	719	2,997 bu.
Cabbage	118	124	995 tons
Potatoes	3,891	4,747	250,855 bu.
Roots raised for stock food	....	69	....
Canning factory crops	6	1	....
Other vegetables and garden crops	367	445	....
Fruits:			
Apples	2,340	2,704	60,992 bu.
Peaches	65	93	913 bu.
Pears	74	98	3,671 bu.
Plums	44	30	3,690 lbs.
Cherries	24	78	9,148 lbs.
Quinces	....	3	....
Vineyard	4	1	290 lbs.
Small fruits	160	104	....

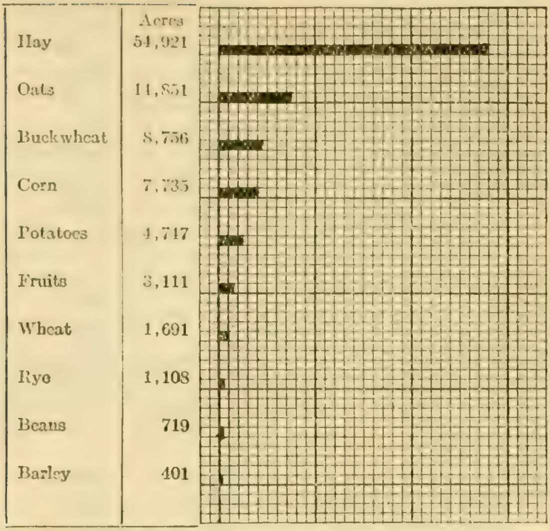
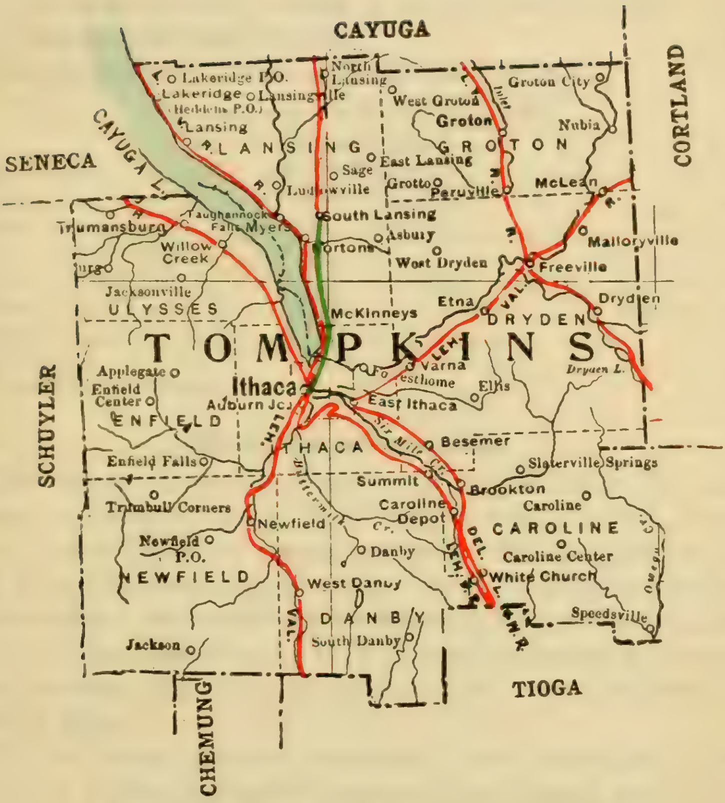


FIG. 157.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN TIOGA COUNTY


CAYUGA
SENECA
CORTLAND
SCHUYLER
TIOGA
CHEMUNG
CAYUGA L.
TOMPKINS
LANSING
GROTON
ULYSSES
DRYDEN
ENFIELD
ITHACA
CAROLINE
NEWFIELD
DANBY
Lakeridge P.O.
Lakeridge
(Heddens P.O.)
Lansingville
North Lansing
West Groton
Groton
Groton City
Nubia
Lansing
Sage
East Lansing
Ludlowville
Grotto
Peruville
McLean
South Lansing
Taughannock Falls
Myers
Trumansburg
Asbury
Willow Creek
Portland
West Dryden
Mallory ville
Freeville
Jacksonville
Etna
Dryden
McKinneys
Varna
Forest Home
Ellis
Dryden L.
Applegate
Enfield Center
Ithaca
Auburn Jc.
East Ithaca
Besemer
Enfield Falls
Summit
Slaterville Springs
Brookton
Trumbull Corners
Caroline Depot
Caroline
Newfield
Newfield P.O.
Danby
Caroline Center
White Church
West Danby
Speedsville
South Danby
Jackson
Six Mile Cr.
Buttermilk Cr.
Owego Cr.
LEH. VAL.
DEL. L. & W. R.R.

Map of Tompkins County, Showing Townships

Red, railroads; green, electric roads

TOMPKINS COUNTY

This county lies in the central part of the state, in the southern part of the Finger Lakes region. It has an area of 304,640 acres. The extent from north to south is approximately 24 miles, and from east to west about 20 miles.

The population is shown in the following table:

Population by Cities and Townships

(Census of 1915)

Ithaca (city)*	16,750	Lansing	2,612
Caroline	1,676	Newfield	1,647
Danby	1,230	Ulysses	2,613
Dryden	3,556		
Enfield	1,057	Total	36,535
Groton	3,501		
Ithaca	1,893		

---

* Ithaca is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Cayuga and Seneca in 1817, and named in honor of Daniel D. Tompkins, then governor of the state. All of Tompkins County, except the three southern towns, was included in the military tract. With the exception of the Jesuit fathers, who established a mission in this section, the raiding expedition of Sullivan in 1779 was the first intrusion of white men into that part of the wilderness which lay at the head of Cayuga Lake.

In 1788 eleven men left Kingston, Ulster County, with two Delaware Indians for guides, to explore the country west of the Susquehanna with the intention of securing a future home. They returned without making a location. The following year three of their number visited the district and selected 400 acres, the west line of which ran through what is now the city of Ithaca. In the valley were several Indian clearings, of which for many years after the first settlement it was the custom for the whole neighborhood to avail themselves. Here they planted corn principally, thinking it could not be raised on the higher ground.

For about ten years after the first settlement the little hamlet on the flats increased but little in population, although the country about was filling up more rapidly. During the succeeding decade, however, the hamlet became a village.

As early as 1797 the salt trade was begun at Ithaca. In the same year a road was commenced from Catskill to the head of Cayuga Lake. The Owego and Ithaca turnpike was built a short time afterward, which was important in the development of both towns. By 1822, Ithaca, with its 859 inhabitants, had become the largest town in the central and western part of the state with the exception of Geneva, Canandaigua, and Buffalo.

When the supply of Nova Scotia plaster was cut off during the War of 1812, the demand for Cayuga Lake plaster opened up a brisk business throughout this section and led to a rapid growth of the town. Great quantities of plaster were transported from Ithaca by teams to Owego and from thence by way of the river the lower markets were supplied. It is said that as many as 800 teams have passed over the Ithaca and Owego turnpike laden with this commodity in a single day.

The surrounding country was actively engaged in agriculture. Large numbers of cattle, horses, sheep, and hogs were driven from Tompkins County to the eastern markets, and salt, plaster, fruit, and whisky were sent down the Susquehanna to Baltimore and other points.

The favorable location of Ithaca, at the head of Cayuga Lake, became still more apparent with the opening of the Erie Canal, and from 1825 to 1840 no settlement in the central part of the state gave greater promise for future importance than did Ithaca. It was expected that when the proposed plans for the Sodus Bay Canal were carried out Ithaca would become the great central city of the state. However, since the railroads that were built across the state did not bring so great advantages to Ithaca as to other localities, these expectations were never realized.

DEVELOPMENT OF INDUSTRY

The first settlers produced corn, wheat, beef, and pork. The completion of the Erie Canal in 1825, and its connection with Cayuga Lake by means of a feeder, offered excellent facilities for the water transportation of wheat to the markets on the coast. As a result, all of that part of Tompkins County contiguous to Cayuga Lake became a wheat-producing section. When the new wheat lands were developed in the west, this county, in common with other sections, found wheat growing less profitable. The production of grain, as well as hay, is, however, of considerable importance.

Much of the land being suitable for grazing, dairying and stock raising have become prominent. The northeastern part of Tompkins County is more generally devoted to dairying than any other part; this is no doubt partly due to the excellent facilities for transportation offered by the railroads which cross this part of the county.

The northwestern end of the county is more particularly a crop region. The town of Ulysses produces large quantities of beans and grain, wheat being used in the rotation with beans. The northern part, especially through the town of Lansing, is a hay and grain region. The southwestern and southern parts are particularly adapted to sheep raising. The southern part also offers excellent opportunity for raising potatoes and buckwheat.

Since climatic conditions are favorable, fruit growing is especially important near and on either side of Cayuga Lake. Peaches, plums, pears, cherries, and apples are grown to good advantage. Grapes, raspberries, and strawberries are grown to some extent.

Ithaca produces a great variety of manufactured articles (p. 728).

CLIMATE AND RAINFALL

The United States Weather Bureau station of Tompkins County, which is located in Roberts Hall, Ithaca, lies at an elevation of 926 feet above sea level. This station is in charge of Dr. W. M. Wilson.

Average dates for the last killing frost in spring and the first in fall are May 4 and October 12, respectively, giving a growing season of 161 days.

The following table covering a period of 59 years, ending with 1917, shows both normal and extreme temperatures and precipitatation:

RECORD OF TEMPERATURE AND PRECIPITATION AT ITHACA

	TEMPERANCE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	24.8	70	1906	—20	1904	2.11	1.96	1915	12.7
February	23.8	62	1906*	—18	1906	1.89	1.65	1896	12.1
March	31.8	82	1905	—14	1885	2.34	2.46	1900	9.9
April	44.6	89	1915	13	1883*	2.32	1.96	1898	3.3
May	56.8	96	1911	22	1903	3.41	2.50	1882	T.
June	65.8	96	1888	32	1913	3.69	2.97	1883	......
July	70.5	102	1911	40	1898	3.39	2.70	1893	......
August	67.9	101	1916	39	1884	3.18	2.71	1917	......
September	61.5	96	1881	29	1913	3.02	4.16	1890	......
October	50.2	87	1900	17	1887	2.92	3.23	1885	T
November	38.7	75	1909	—1	1880	2.38	2.80	1900	5.1
December	29.1	65	1912	—20	1884	2.22	3.09	1901	12.2
Year	47.1	102	1911	—20	1904*	32.87	4.16	1890	55.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface consists principally of an upland broken by a series of ridges extending north and south. That part of the county south of Dryden, Ithaca, and Enfield Center is high and rolling, elevations rising from 1,900 to 2,000 feet in the townships of Dryden, Caroline, and Newfield. In the northern part the uplands are more gently rolling and are cut by several deep valleys like those of the Salmon and Owasco creeks.

Cayuga Lake occupies a deep gorge in the northwestern part of the county and receives the drainage of the greater portion of the area, the principal streams being Salmon, Fall, Cascadilla, Sixmile, and Taughannock creeks and Cayuga Inlet. The southern part is drained by several branches of Owego Creek, a tributary of the Susquehanna. In their passage from the upland the streams have worn deep gorges, and many beautiful waterfalls may be seen within that section of the county adjoining the head of Cayuga Lake. The Taughannock Falls, 215 feet in height, rank as the highest true waterfall in New York State.

The soil in the northern half of the county is generally a gravelly or clayey loam formed by drift deposits, while a large portion of the southern half is a slaty loam derived from disintegration, more or less modified by glacial deposits.

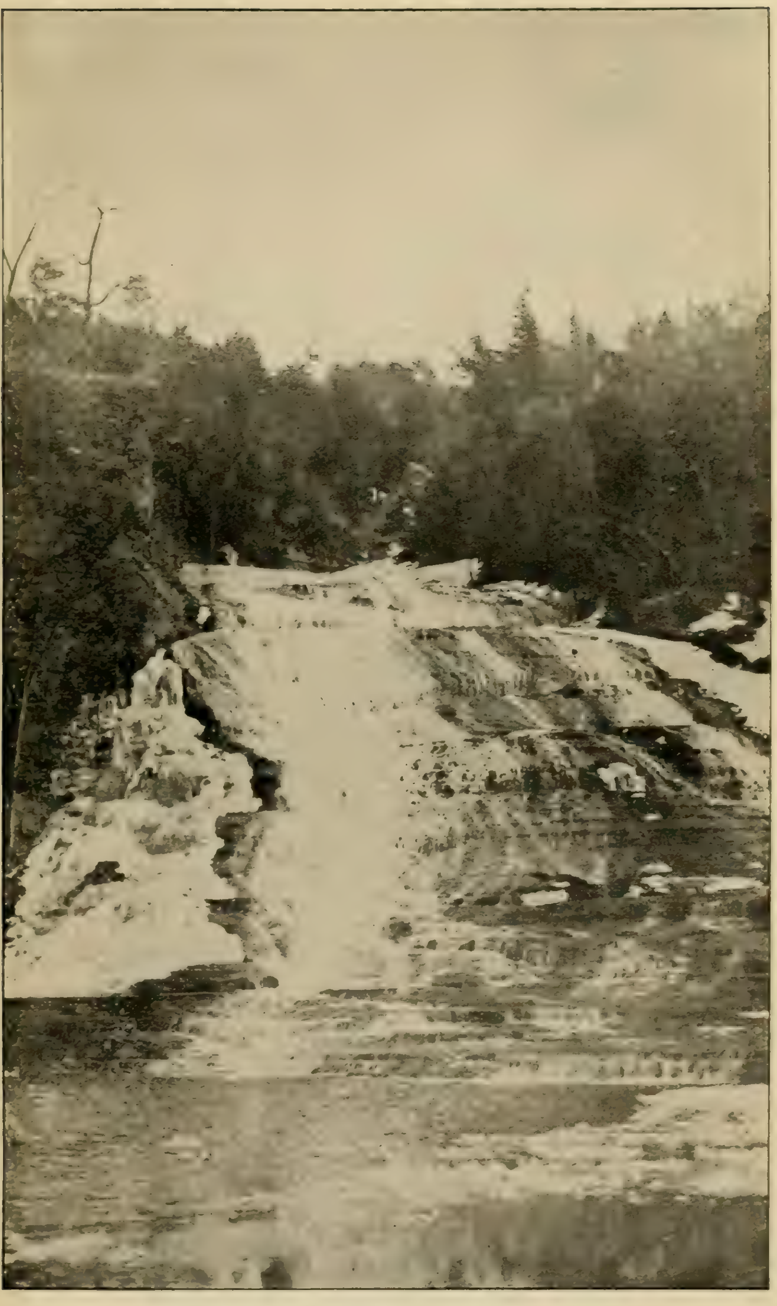


FIG. 158.— BUTTERMILK FALLS, ITHACA

DESCRIPTION BY TOWNSHIPS

CAROLINE: The surface is an upland broken by a series of ridges extending northwest and southeast, which rise 1,400 to 1,800 feet above sea level. The summits of the hills are usually rounded, while their sides are steep. The principal streams are Owego and Sixmile creeks and their branches. The soil is generally a gravelly loam, well adapted to grazing.

Products: Potatoes, buckwheat and dairy products.

Average values of farm land range from $20 to $80 per acre.

DANBY: The surface is broken by ranges of hills extending north and south 1,600 to 1,800 feet above the valleys. Their summits are rounded, and the slopes are generally steep. The principal stream is Cayuga Inlet. The soil is a mixed gravelly and shaly loam with occasional patches of clay, and well adapted to grazing.

Products: Buckwheat and live stock.

Average values of farm land range from $25 to $90 per acre.

DRYDEN: The surface of the northern half is rolling or moderately hilly, and that of the southern half hilly and broken. The eastern border forms the watershed between Tioughnioga River and Cayuga Lake.

The principal streams are Cascadilla and Sixmile creeks. Dryden Lake is a small body of water lying in an elevated valley 1,500 feet above tide near the eastern border.

Products: Dairy products, buckwheat and other grains and potatoes.

Average values of farm land range from $35 to $90 per acre.

ENFIELD: The surface is rolling, with an average elevation of 1,400 to 1,600 feet above Cayuga Lake. The principal streams are Butternut Creek and the south branch of Taughannock Creek. The soil is principally a gravelly loam.

Products: Dairy products, sheep, beans and buckwheat.

Average values of farm land range from $40 to $80 per acre.

GROTON: The surface is rolling or moderately hilly. The land rises from the valleys by long gradual slopes to a general height of 1,200 to 1,500 feet. The principal streams are Owasco Inlet and Fall Creek. The soil is a fine quality of gravelly loam, underlaid by slate.

Products: Dairy products, grain and potatoes.

Average values of farm land range from $60 to $100.

ITHACA: A low and nearly level tract of land two miles long and one and a half miles broad extends south from the lake shore. From this the valley of Cayuga Inlet opens to the southwest and that of Sixmile Creek to the southeast. Ridges 1,000 to 1,200 feet high with steep slopes separate these valleys and surround the low land at the head of the lake. From the summits of these ridges the surface spreads out in a rolling upland. The principal streams are Fall, Cascadilla, Sixmile, Buttermilk, and Tenmile creeks, and Cayuga Inlet. The soil is a fertile gravelly loam on the uplands and a deep rich alluvium in the valleys.

Products: Wheat and other grains, dairy products and vegetables.

Average values of farm land range from $50 to $150 per acre.

LANSING: The surface is principally a rolling upland 800 to 1,000 feet above the lake, bordered by steep declivities. Salmon Creek, the principal stream, flows through a narrow valley near the center of the town. The soil is generally a fertile gravelly loam.

Products: Hay, wheat and other grains, sheep and cattle.

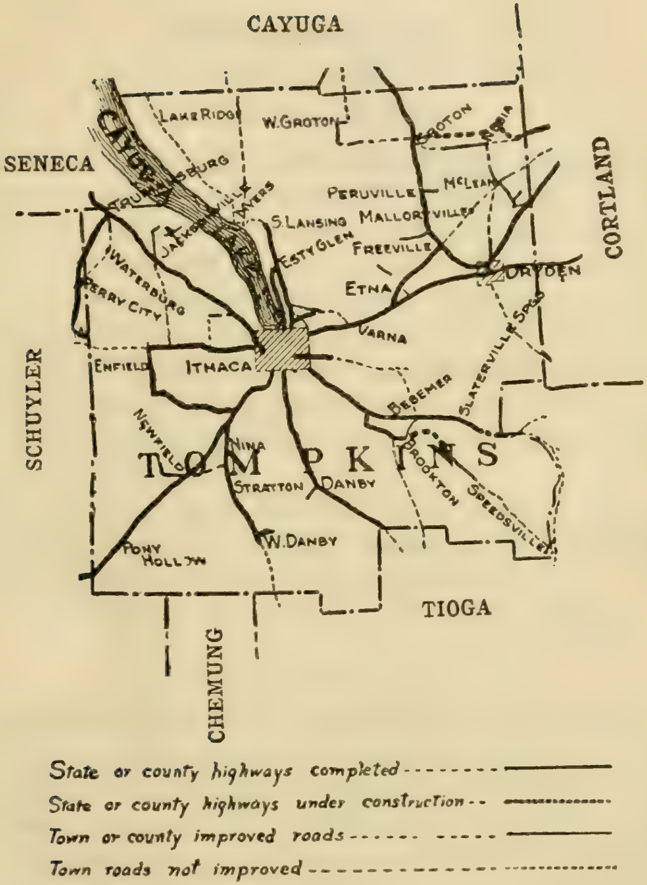
Average values of farm land range from $70 to $110 per acre.

NEWFIELD: The surface is high and hilly, the ridges being 1,700 to 1,900 feet above tide. The principal streams are Cayuga Inlet and Butternut Creek, the valleys of which are usually narrow and bordered by steep hillsides. The soil is a shaly and clayey loam well adapted to grazing.

Products: Dairy products and beans.

Average values of farm land range from $40 to $80 per acre.

ULYSSES: A range of bluffs 600 to 800 feet high with steep slopes borders on Cayuga Lake; from their summits the surface


CAYUGA
SENECA
CORTLAND
SCHUYLER
TIOGA
CHEMUNG
TOMPKINS
CAYUGA LAKE
LAKE RIDGE
W. GROTON
GROTON
MCLEAN
PERUVILLE
MALLORYVILLE
FREEVILLE
S. LANSING
ESTY GLEN
ETNA
DRYDEN
VARNA
ITHACA
ENFIELD
TRUMANSBURG
JACKSONVILLE
WATERBURG
PERRY CITY
BESEMER
SLATERVILLE SPGS
BROOKTON
SPEEDSVILLE
NEWFIELD
NINA
STRATTON
DANBY
W. DANBY
PONY HOLLOW
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

spreads out in an undulating upland. The principal stream is Taughannock Creek. The soil is a fine quality of gravelly loam.

Products: Beans, grains, potatoes and hay.

Average values of farm land range from $80 to $125 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

Two lines of the Lehigh Valley Railroad enter Ithaca from the north, one continuing south through Tompkins, Tioga, and Chemung counties. Freeville is the center of two Lehigh Valley lines, one of which extends from Auburn on the north and through Tioga County and Pennsylvania on the south. The second line comes from Camden, Oneida County, and passes through Freeville and Ithaca and south through Tioga and Chemung counties to Cortland.

A branch of the Delaware, Lackawanna and Western leaves the main line at Owego, Tioga County, and extends northwest through Tompkins County to Ithaca.

The Central New York Southern Railroad enters the county from the north, extending to South Lansing in Tompkins County and reaching Auburn, Cayuga County, on the north.

An electric line runs between Ithaca and South Lansing.

Improved Highways

All the improved highways in Tompkins County radiate from or connect with the city of Ithaca. From this city one may travel over macadam roads northwest through Seneca County and in either direction across the state; southwest through Schuyler and Chemung counties, reaching the southern highway that crosses the state; and east to Dryden or Freeville, continuing from these points either to Syracuse or Auburn. Shorter sections extend north from Ithaca; north to South Lansing; southeast to Slaterville; south through Danby to the county line; south to West Danby; and west to Mecklenburg.

There are in the county 114 miles of completed improved highways with 9 miles additional under construction.

AVAILABLE MARKETS

The local markets of Tompkins County include the following:

Ithaca, which is widely known as the seat of Cornell University, has a variety of manufactories, including salt, guns, farm machinery, and farm supplies. The Thomas Morse Aircraft Corporation and the Morse Chain Company are both located at Ithaca. Groton and Dryden are also good markets.

Trumansburg has a pickling plant and a bean-cleaning establishment.

Most of the milk of the county is shipped to New York City and Philadelphia.

Direct transportation is afforded over the Lehigh Railroad to the Buffalo and Rochester markets.

The city of Ithaca, including Cornell University, .consumes large amounts of milk and dairy products. Considerable quantities, however, are shipped to New York City and Philadelphia. The manufactured dairy products include 12,000,000 pounds of condensed milk, and the manufacture of ice cream is an important factor.

The agricultural organizations are as follows:

Dryden Agricultural Society.
Granges: Pomona and eighteen subordinate granges.
Holstein-Friesian Club of Tompkins County.
Patrons of Industry: one association.
Tompkins County Agricultural and Horticultural Society.
Tompkins County Dairymen's League.
Tompkins County Farm Bureau Association.
Tompkins County Farmers' Company, Inc.
Tompkins County National Farm Loan Association.
Tompkins County Sheep Growers' Cooperative Association, Inc.
Trumansburg Poultry and Pet Stock Association.
Union Agricultural and Horticultural Society of Ulysses, Covert and Hector.

EDUCATIONAL FACILITIES

Ithaca is the seat of Cornell University and the Ithaca Conservatory of Music. Approved courses in agriculture and home making are given at Trumansburg.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Dryden, Freeville, Groton, Ithaca, Ludlowville, McLean, Newfield, and Trumansburg.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	273, 022
Number of farms	2, 988
Per cent of farm land improved	79.0

LIVE STOCK PRODUCTS

Milk sold	4, 626, 134 gal.
Cream sold	10, 795 gal.
Butter fat sold	445, 412 lbs.
Butter produced	386, 700 lbs.
Eggs produced	1, 175, 707 doz.
Wool produced	10, 931 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	8, 120
Cattle	24, 220
Sheep	19, 644
Swine	8, 928
Poultry	183, 706

BEES

Number of colonies	4, 536

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	8, 514	278, 503
Oats	21, 727	596, 746
Wheat	6, 223	144, 917
Barley	1, 916	46, 679
Buckwheat	12, 737	293, 086
Rye	1, 282	22, 004

	Acres	Tons
Hay and forage	69, 038	88, 527

Special Crops:	Acres	Yield
Potatoes	4,908	689,360 bu.
Vegetables, other than potatoes	913	....
Dry edible beans	510	7,345 bu.
Dry peas	82	1,515 bu.

Fruits:		
Apples	119,084 trees	154,058 bu.
Peaches and nectarines	34,090 trees	17,833 bu.
Pears	16,609 trees	12,613 bu.
Plums and prunes	9,908 trees	4,438 bu.
Cherries	10,847 trees	3,700 bu.
Quinces	461 trees	166 bu.
Grapes	71,922 vines	550,090 lbs.
Small fruits	101 acres	154,434 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	2,749	2,597

LIVE STOCK AND POULTRY

Horses and mules	7,439	6,935
Cattle	22,531	21,562
Sheep	12,304	10,044
Swine	5,376	4,996
Poultry	171,147	141,883

BEES

Number of colonies	2,295	2,452

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	4,839	3,763	83,359
Oats	17,672	17,205	438,718
Barley	2,583	2,231	39,077
Buckwheat	8,619	7,696	120,580
Wheat (winter)	7,634	7,437	128,400
Wheat (spring)	130	124	1,856
Rye	677	787	10,440

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	2,666	1,950	4,100 tons
Other hay	58,464	55,088	69,260 tons
Corn (ensilage)	4,251	3,791	22,893 tons
Corn (fodder)	....	1,429	....
Special Crops:			
Field beans	3,047	3,964	30,409 bu.
Cabbage	335	419	1.660 ton
Potatoes	3,393	3,686	227,806 bu.
Roots raised for stock food	....	69	....
Canning factory crops	28	99	....
Other vegetable and garden crops	559	560	....
Fruits:			
Apples	3,617	4,020	77,771 bu.
Peaches	403	442	5,933 bu.
Pears	162	240	4,386 bu.
Plums	37	51	6,515 lbs.
Cherries	76	57	17,665 lbs.
Quinces	....	11	80 bu.
Vineyard	111	129	149,510 lbs.
Small fruits	288	229	....

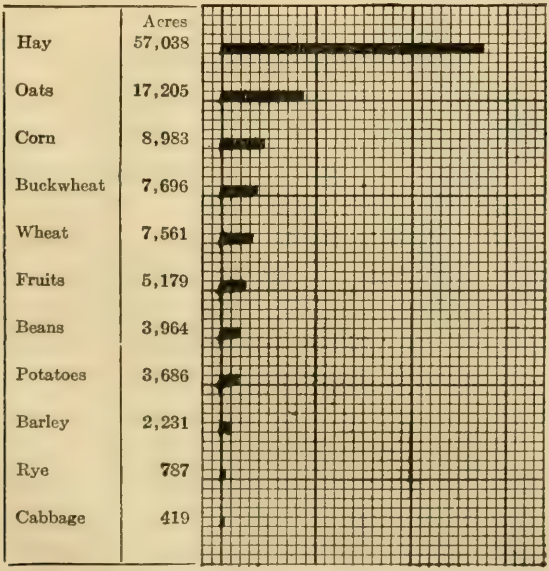


FIG. 159.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN TOMPKINS COUNTY

ULSTER COUNTY

Ulster County, which lies in the southeastern part of the state on the west bank of the Hudson, has an area of 729,600 acres. From north to south the extent is approximately 35 miles; from east to west it averages from 25 to 40 miles.

The population is shown in the following table:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Denning	531	Plattekill	1,928
Kingston (city)*	26,354	Rochester	2,715
Esopus	4,643	Rosendale	2,886
Gardiner	1,328	Saugerties	9,856
Hardenbergh	565	Shandaken	2,736
Hurley	1,189	Shawangunk	2,392
Kingston	323	Ulster	3,437
Lloyd	2,865	Wawarsing	7,507
Marbletown	2,709	Woodstock	1,605
Marlborough	4,308		
New Paltz	2,569	Total	85,367
Olive	2,921		

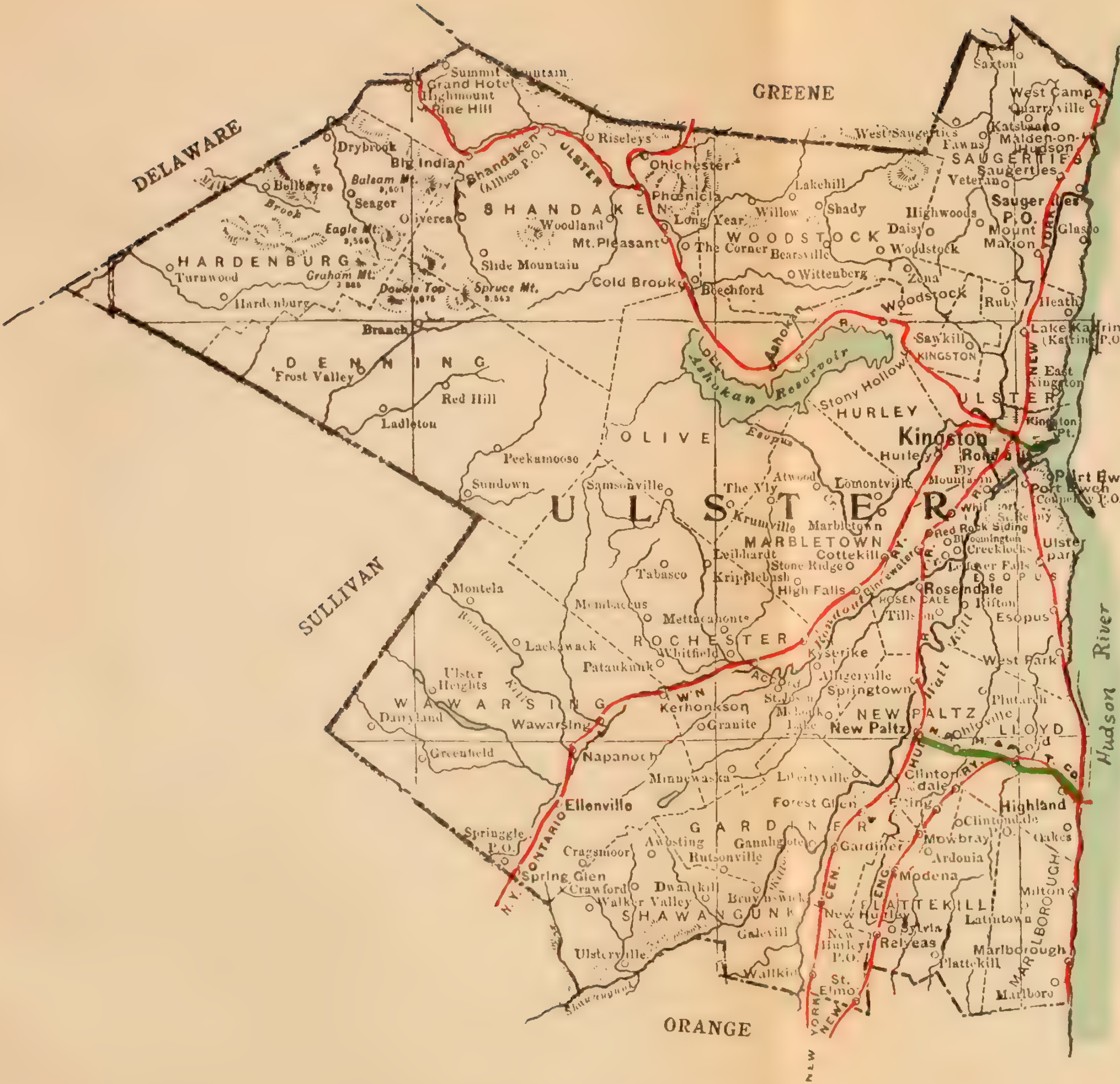
---

* Kingston is the county seat.

HISTORICAL ASSOCIATIONS

Ulster County, which was formed in 1683, was named from the third dukedom of the Duke of York — that of Ulster, Ireland. There are, therefore, three counties commemorating the Duke of York — Albany, New York, and Ulster.

The Dutch established a trading post near the Hudson River on the present site of Kingston in 1614. This is said to have been the third settlement made in New York. The county appears to have suffered more from Indian hostilities than any other portion of the country while under Dutch control. The early settlement being broken up, a new one was commenced between 1630 and 1640. This was also attacked, and was finally abandoned in 1655. Before 1660 the pioneers had again located at and near Kingston. During that year a treaty was concluded with the Indians and the settlers became so unsuspicious of danger that they left open the gates of their fort both day and night. Within a few years, however, the outer settlements were all destroyed.


GREENE
DELAWARE
SULLIVAN
ORANGE
DUTCHESS
Hudson River
ULSTER
SHANDAKEN
HARDENBURGH
DENNING
OLIVE
WOODSTOCK
SAUGERTIES
HURLEY
KINGSTON
MARBLETOWN
ROCHESTER
WAWARSING
NEW PALTZ
ROSENDALE
ESOPUS
LLOYD
GARDINER
SHAWANGUNK
PLATTEKILL
MARLBOROUGH
Summit Mountain
Grand Hotel
Highmount
Pine Hill
Drybrook
Big Indian
Shandaken (Allaben P.O.)
Riseleys
Bellayre
Balsam Mt. 3,601
Seager
Oliverea
Woodland
Mt. Pleasant
Eagle Mt. 3,566
Slide Mountain
Turnwood
Graham Mt. 3,868
Double Top 3,875
Spruce Mt. 3,562
Hardenburg
Cold Brook
Chichester
Phœnicia
Long Year
The Corner
Lakehill
Willow
Shady
Bearsville
Highwoods
Daisy
Woodstock
Wittenberg
Zena
Beechford
Ruby
Heath
Saxton
West Camp
Quarryville
West Saugerties
Fawns
Katsbaan
Malden-on-Hudson
Saugerties
Veteran
Saugerties P.O.
Mount Marion
Glasco
Lake Katrine (Katrine P.O.)
East Kingston
Sawkill
Branch
Frost Valley
Red Hill
Ladleton
Ashokan Reservoir
Esopus
Stony Hollow
Kingston
Kingston Pt.
Hurley
Rondout
Fly Mountain
Port Ewen
Port Ewen (Connelly P.O.)
Peekamoose
Sundown
Samsonville
The Vly
Atwood
Lomontville
Krumville
Marbletown
Whiteport
St. Remy
Red Rock Siding
Bloomington
Creeklocks
Leibhardt
Cottekill
Stone Ridge
Lefever Falls
Ulster park
Tabasco
Kripplebush
High Falls
Rosendale
Rifton
Montela
Mombaccus
Mettacahonts
Tillson
Esopus
Rondout Kill
Lackawack
Whitfield
Kyserike
West Park
Ulster Heights
Pataukunk
Accord
Alligerville
Springtown
Plutarch
Dairyland
Wawarsing
Kerhonkson
St. Josen
Mohonk Lake
New Paltz
Ohioville
Granite
Greenfield
Napanoch
Minnewaska
Libertyville
Clintondale
Ellenville
Forest Glen
Ulsters
Highland
Springgle P.O.
Cragsmoor
Awosting
Gardiner
Ganahgote
Clintondale P.O.
Mowbray
Oakes
Rutsonville
Ardonia
Spring Glen
Crawford
Dwaarkill
Modena
Walker Valley
Bruynswick
Milton
New Hurley
Lattintown
Galeville
New Hurley P.O.
Sylvia
Relyeas
Ulsterville
Marlborough
Plattekill
Wallkill
St. Elmo
Marlboro
Shawangunk
N.Y. ONTARIO & W'N R.R.
N.Y. CEN.
NEW YORK
CHURCH
WALL KILL
NEW ENG.
HUD. R. T. CO.
WEST SHORE
Glenerie
Esopus

MAP OF ULSTER COUNTY, SHOWING TOWNSHIPS

Red, railroads; green electric roads

In 1710 a company of Palatines were given about 800 acres at "West Camp," in the northern part of the county, in return for which they were expected to obtain naval supplies for the queen from the pine forests. The business proving unprofitable for the colonists, about two years later many of the company traveled through the forests to Schoharie and other places and took up land for themselves.

In Kingston (April 20, 1777) the first constitution of the state of New York was adopted. On July 30, 1777, Governor Clinton, first governor of the state under the constitution, took the oath of office and was inaugurated in this city. In August of the same year the state legislature convened here, the Senate organizing in the old Senate House, which is still standing. The regular sessions of the legislature were held in this house until the meetings were broken up by the near approach of the British forces after the capture of Fort Montgomery in the Highlands, when the legislature appointed a new council of safety and dispersed, the members rushing to join the patriot army and to defend their families. In this city also John Jay, the first chief justice of the United States Supreme Court, opened the first court in the state and impaneled the first jury.

Immediately after Burgoyne's surrender, Kingston was invaded and burned, with the exception of one house — the Van Steenburg house. This building is still standing.

Since the close of the war the county has made steady progress. The completion of the Delaware and Hudson Canal, in 1828, was a marked era in the industrial history of the county. Kingston at once became important, since it was a direct outlet for Pennsylvania coal. At about this time water limestone was accidentally discovered and Ulster County cement was first made, which, with quarrying and the opening of railroads, greatly added to its prosperity.

Passengers were regularly carried in sailing vessels as late as 1820. The first steamboat to enter Rondout Creek was the "New London," in 1826. There had then been regular steamboat traffic on the river for some fifteen years or more. Little having then been heard of the scenery along the Hudson, river trips were mostly made by night. It was not until some years later that the day line opened business. Shipbuilding is one of the important industries in the county (p. 741).

A large area in this county has recently been given over to the construction of the Ashokan Reservoir, one of the water supplies for New York City.

In the acreage of small fruits Ulster County ranks second in the state; it also stands third in production of grapes.

CLIMATE AND RAINFALL

The meterological station in Ulster County is located at Mohonk Lake, at an elevation of 1,235 feet. The present observer is D. Smiley.

Average dates for the last killing frost in spring and the first in fall are April 26 and October 15, respectively, giving a growing season of 172 days.

The following table covers the period 1896 to 1918:

RECORD OF TEMPERATURE AND PRECIPITATION AT MOHONK LAKE

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	26.7	60	1906*	—16	1914*	3.47	2.02	1902	16.6
February	22.9	56	1903	—16	1908	3.75	2.75	1896	15.1
March	33.2	76	1905	—8	1912	4.56	6.50	1914	11.4
April	45.5	88	1915	14	1897	3.96	3.44	1910	3.0
May	57.2	91	1914	23	1907	3.61	2.73	1908	T.
June	64.5	89	1914*	37	1910	3.71	3.13	1903	......
July	69.8	96	1911	50	1912*	4.84	4.05	1902	......
August	67.6	94	1918	44	1912	4.85	4.75	1901	......
September	61.2	93	1914	31	1904	4.45	4.40	1904	......
October	50.9	82	1897	22	1904	3.74	5.07	1903	T.
November	41.1	70	1909*	7	1901	2.63	3.28	1896	3.0
December	27.0	61	1912	—24	1917	4.17	3.70	1915	12.6
Year	47.3	96	1911	—24	1917	47.74	6.50	1914	61.7

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is mostly a hilly and mountainous upland. The northwestern part is occupied by the Catskills, the Shawangunk Mountains extending from the southwest corner in a northeasterly direction almost the length of the county. In the mountain region there are irregular ridges and numerous isolated peaks whose sides and summits are too steep and rough for cultivation. These peaks rise from 1,500 to 5,000 feet above the Hudson, Slide Mountain, in the town of Shandaken, being the highest point.

Esopus Creek flows through the northern part and empties into the Hudson. Rondout Creek enters the southwest corner of the county and flows northeast along the west side of the Shawangunk Mountains, entering the Hudson at Kingston. Its principal tributary is the Wallkill River, which flows along the east side of the Shawangunk Mountains.

The soil is generally a good quality of sandy, gravelly loam, occasionally intermixed with clay. The valleys are covered with a deep rich alluvium.

DESCRIPTION BY TOWNSHIPS

DENNING: The surface is a broken and mountainous upland. The streams are the head branches of Rondout Creek and Neversink River. The valleys are narrow and are bordered by steep rocky hillsides. The soil on the uplands is gravelly loam and in the valleys a sandy loam.

Products: Butter, eggs, buckwheat and lumber.

Average values of farm land range from $5 to $50 an acre.

ESOPUS: The surface is rolling in the east and moderately hilly in the west. Wallkill River and Rondout Creek form the west and north boundaries. The soil is a light clayey loam. It was on the farm of Robert L. Pell in this town that the celebrated Newtown apple was first raised to its greatest perfection and marketed most successfully both here and abroad.

Products: Apples, pears, plums, cherries, small fruits and poultry products; also potatoes and grain.

Average values of farm land range from $10 to $350 an acre. Orchards are valued at from $250 to $800 an acre.

GARDINER: The surface is rolling in the east and hilly in the center and west, the Shawangunk Mountains extending along the western border. The Wallkill River flows northeast through the center, receiving Shawangunk Kill from the southwest. The soil is largely a gravelly loam, with clay and alluvium along the streams. Dairying is the largest industry in this town.

Products: Dairy and poultry products, oats, barley, wheat, rye, buckwheat, corn, apples and pears.

Average values of agricultural land range from $20 to $150 an acre; of fruit land, $100 to $350 an acre.

HARDENBERGH: The surface is a broken and mountainous upland, the highest summits being 3,700 to 3,900 feet above tide.

Products: Principally lumber.

Average values of farm land range from $5 to $50 an acre.

HURLEY: The surface is a rolling and moderately hilly upland, the highest summits being about 700 feet above tide. Along the course of Esopus Creek, which flows northeast through the southern part, are extensive fertile flats. North of the creek a considerable portion is unfit for cultivation. The soil is generally a sandy loam.

Products: Dairy and poultry products and grain.

Average values of farm land range from $10 to $250 an acre.

KINGSTON: The surface is broken and hilly. Esopus Creek and its tributary Saw Kill are the principal streams, Rondout Creek forming the southern boundary. The soil is principally a clayey loam.

Products: Dairy and poultry products and grain.

Average values of farm land range from $10 to $200 an acre.

LLOYD: The surface is mostly a rolling and hilly upland, averaging about 200 feet above tide, and terminating in a bluff on the river. Black Brook is the principal stream. The soil is generally a clayey and gravelly loam.

Products: Apples, pears, plums, cherries, grapes, and small fruits, with some poultry products and grain.

Average values of farm land range from $25 to $350 an acre. Orchards are valued at from $250 to $1,000 an acre.

MARBLETOWN: The surface is a hilly upland, broken by the valleys of the streams. Esopus Creek flows through the northern part and Rondout Creek through the southeast corner. The soil

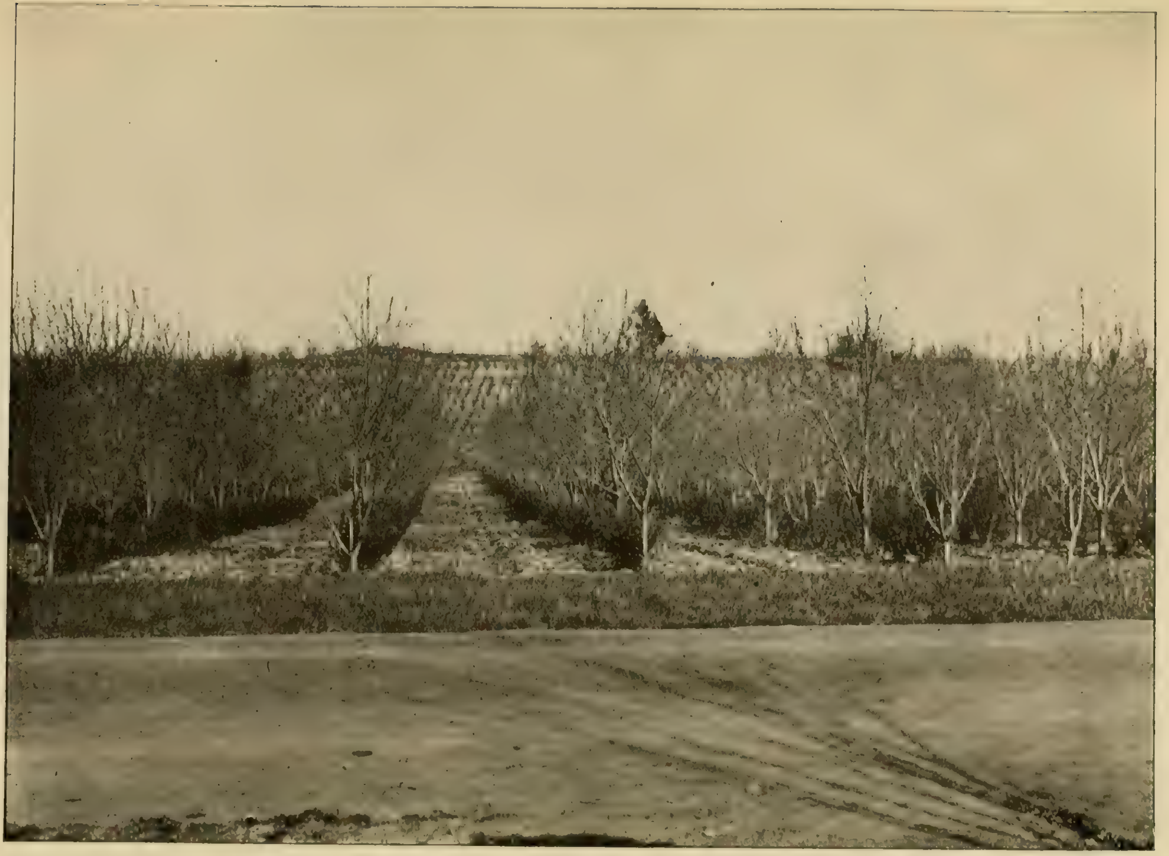


Fig. 160.— Cherry Orchard with Intercrop of Currants

is chiefly a clayey and sandy loam. Lake Mohonk nestles among the mountains on a line between this town and Rochester. Two important public conferences are held at this place yearly — the International Arbitration Conference and the Indian Conference. A lime kiln is in operation in this town.

Products: Dairy and poultry products, corn, oats, wheat, rye, buckwheat; also some fruit.

Average values of farm land range from $5 to $250 an acre.

MARLBOROUGH: The surface is broken and hilly. Marlborough Mountain on the west border is about 1;000 feet above the river. The streams are principally small brooks flowing directly into the Hudson. The soil is a slaty loam.

Products: Chiefly fruit, including apples, pears, plums, cherries and small fruits; also poultry products and grain.

Average values of farm land range from $25 to $350 an acre. Orchards range from $300 to $800 an acre.

NEW PALTZ: The surface is mostly a hilly upland, the Shawangunk Mountains extending along the west border. The Wallkill River, which flows northeast through the center, is bordered by wide fertile flats. The soil is generally a fine quality of sandy loam. Dairying is the principal industry, although about one-third of the county gives considerable attention to the production of fruit.

Products: Dairy and poultry products, live stock, potatoes, apples, pears and grain.

Average values of farm land range from $10 to $350 an acre. Apple orchards range from $300 to $800 an acre.

OLIVE: The surface is mountainous in the north and west and hilly in the south and east. A considerable portion of the mountainous region is too rough for profitable cultivation. Esopus Creek is the principal stream. The soil is a sandy, gravelly and clayey loam.

Products: Butter, live stock and buckwheat.

Average values of farm land range from $5 to $100 an acre.

PLATTEKILL: The surface is broken by a series of ridges whose elevation on the average is 500 to 700 feet above tide. The streams are small brooks and creeks. The soil is a fine quality of sandy and gravelly loam. Dairying is the principal industry, fruit raising standing second in prominence.

Products: Dairy and poultry products, live stock, apples, pears and grain.

Average values of farm land range from $10 to $350 an acre.

ROCHESTER: Ranges of mountains extend along the east and west borders and a rolling upland occupies the central portions. Rondout Creek is the principal stream. Along this valley extends the Delaware and Hudson Canal. The soil on the uplands is a gravelly loam; in the valleys it is a sandy loam mixed with clay. A good grade of limestone rock is found and two kilns are in operation. This township leads in poultry raising.

Products: Poultry and dairy products, grain, hay and vegetables, including potatoes, onions, sweet corn and tomatoes.

Average values of farm land range from $10 to $200 an acre.

ROSENDALE: The surface is a rolling and broken upland, the highest summits rising 200 to 500 feet above the valleys. Rondout Creek is the principal stream. This town, which was formerly noted for the production of Rosendale cement, is of very little agricultural value. The soil is principally a sandy loam.

Products: Poultry, dairy products and grain.

Average values of farm land range from $5 to $75 an acre.

SAUGERTIES: The surface is rolling in the east and hilly in the center and west and includes considerable untillable land. Platte Kill and Esopus Creek form the principal drainage. The soil along the river is a clayey loam, while on the uplands it is a sandy and gravelly loam.

Products: Apples, grain, hay, and dairy and poultry products.

Average values of farm land range from $10 to $350 an acre.

SHANDAKEN: The surface is mostly a mountainous upland, broken by deep ravines. The slopes are steep and rocky, and a large part of the surface is too rough for profitable cultivation. Esopus Creek is the principal stream.

The soil in the valleys is a clayey and sandy loam.

Products: Lumber; also butter, eggs and buckwheat.

Average values of farm land range from $5 to $100 an acre.

SHAWANGUNK: The surface is a hilly and broken upland. The Shawangunk Mountains along the west border are about 2,000 feet above tide. The soil is generally a gravelly loam.

Products: Dairy and poultry products, grain and hay.

Average values of farm land range from $40 to $250 an acre.

ULSTER: The surface is broken and hilly. Esopus Creek and its tributary, the Sawkill, are the principal streams. The soil is principally a clayey loam. The most important industry in this town is the manufacture of brick from the vast deposits of clay along the river front. However, the farming, gardening, and dairying industries are generally profitable.

Products: Apples, grain, hay, and dairy and poultry products.

Average values of farm land range from $10 to $200 an acre.

WAWARSING: The surface is mostly a mountainous upland broken by deep valleys. The Shawangunk Mountains along the east border and spurs of the Catskills occupy the central and western parts. East Mountain in the northern part is 2,271 feet above tide. Rondout Creek is the principal stream. The soil in the valley is generally a sandy loam.

At Napanoch is located the Eastern New York Reformatory.

Products: Dairy products, grain, hay and poultry.

Average values of farm land range from $10 to $200 an acre.

WOODSTOCK: The surface is mostly a mountainous upland of little agricultural value. Several fine valleys extend through the town. Overlook Mountain in the northeast corner is 3,150 feet above tide. The scenery in this vicinity is very attractive. The soil is a clayey and slaty loam on the uplands and a gravelly loam in the valleys.

Products: Butter, live stock and buckwheat.

Average values of farm land range from $5 to $200 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

The West Shore line of the New York Central extends the length of the county on its eastern border in a branch running through Kingston southwest to Berea in Orange County, where it connects with the Erie.

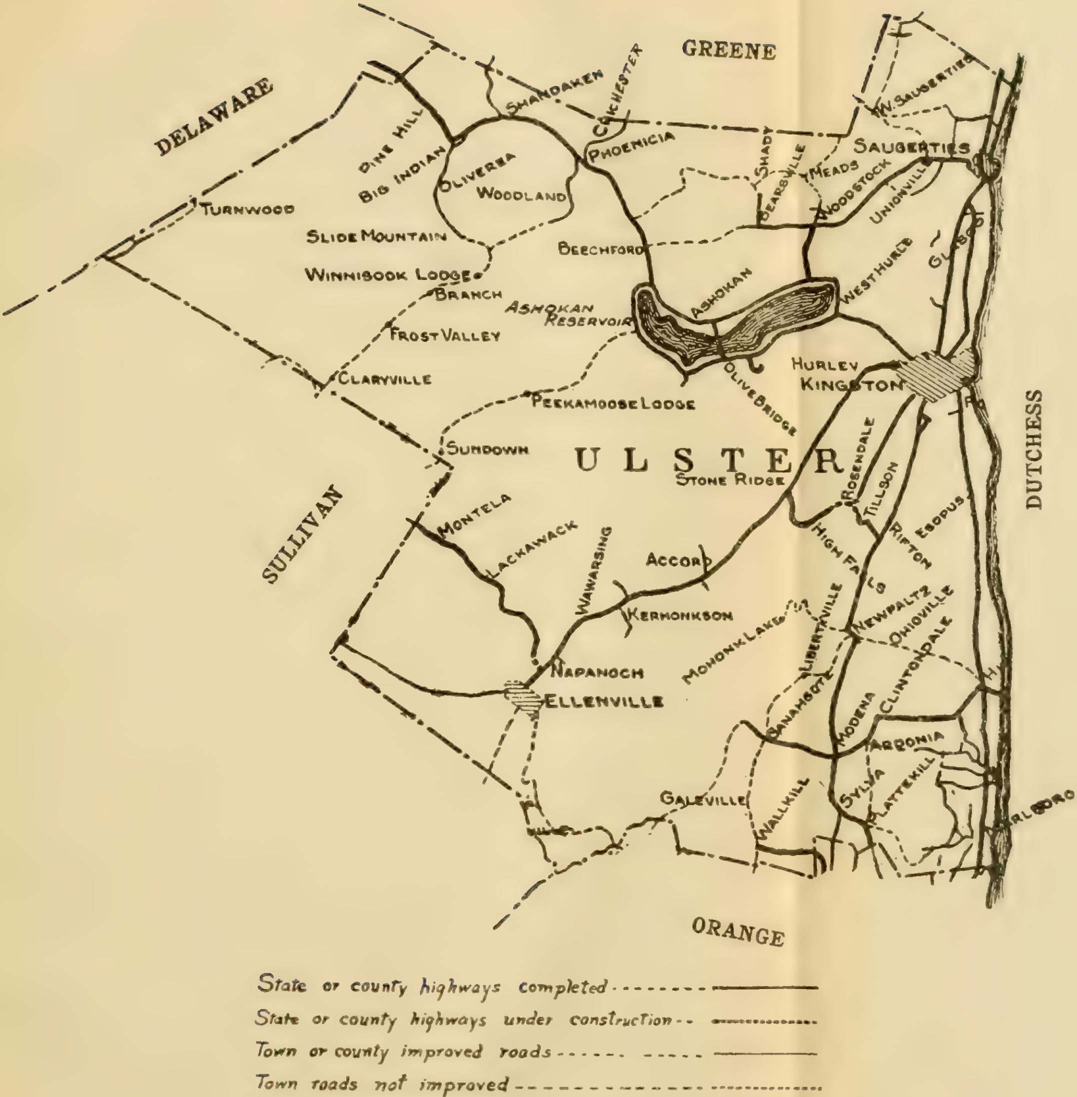
From Kingston extends the New York, Ontario and Western southwest into Sullivan County — also the Ulster and Delaware northwest past the Ashokan Reservoir through Delaware County and connecting with the Delaware and Hudson at Oneonta.

A branch from Phœnicia in Shandaken extends into the Catskill Mountain region of Greene County. The Kingston ferry transports freight and passengers across the river to Rhinecliff, there connecting with the New York Central and the Central New England railroads.

An electric road runs from Highland to New Paltz.

Improved Highways

An improved highway extending south from Albany passes through Saugerties. A short distance below this place it divides into two parts, both of which lead to Kingston and Newburgh. Other roads leading from Kingston are as follows: One southwest to Rosendale; a second southwest to Ellenville, a branch running from Napanoch to Eureka; a third northwest and circling the Ashokan Reservoir, this road continuing northwest from the west end of the reservoir through Phœnicia and other points to Stamford and Oneonta. Near the east end of the reservoir a road runs north and east to Saugerties, a branch of this road running west from Woodstock to Bearsville. A short section of improved highway extends from Eureka to Lackawack, from which point it is under construction to Ellenville. From Highland the road leads west through Modena and Ganahgote. There are in the county 165 miles of completed improved highways with 18 miles additional under construction.


GREENE
DELAWARE
SULLIVAN
ORANGE
DUTCHESS
ULSTER
W. SAUGERTIES
SAUGERTIES
SHANDAKEN
CHICHESTER
PHOENICIA
SHADY
BEARSVILLE
MEADS
WOODSTOCK
UNIONVILLE
PINE HILL
BIG INDIAN
OLIVEREA
WOODLAND
TURNWOOD
SLIDE MOUNTAIN
WINNISOOK LODGE
BRANCH
BEECHFORD
ASHOKAN
ASHOKAN RESERVOIR
WEST HURLEY
GLASCO
FROST VALLEY
CLARYVILLE
HURLEY
KINGSTON
OLIVE BRIDGE
PEEKAMOOSE LODGE
SUNDOWN
STONE RIDGE
ROSENDALE
TILLSON
RIPTON
ESOPUS
MONTELA
LACKAWACK
WAWARSING
ACCORD
HIGH FALLS
KERHONKSON
MOHONK LAKE
LIBERTYVILLE
NEWPALTZ
OHIOVILLE
CLINTONDALE
NAPANOCH
ELLENVILLE
SHAWANGUNK
MODENA
ARDONIA
LATTENKILL
SYLVA
WALLKILL
GALEVILLE
MARLBORO
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

AVAILABLE MARKETS

Kingston, the county seat, from its advantages of situation on the Hudson and on various railroad lines, has an extensive trade. It has extensive manufactories of various kinds, including shipbuilding.

Vegetable gardeners in the vicinity of Accord have a splendid market for their products in the boarding sections of Sullivan County. Near Springtown and New Paltz is another garden section, the products of which are marketed principally in Kingston and Poughkeepsie.

New York City is the market for poultry products, except during the summer season, when the poultry men of the lower Rondout Valley — the big poultry section of Ulster County — send their products to Sullivan County. A large part of the milk produced in the county is sent to New York City. Quantities of fruit are sent to New York by boat. Philadelphia and New England are also important outlets for fruit.

Within the county are two canning factories.

The agricultural organizations are as follows:

Clintondale Fruit Growers' Cooperative Association, Inc.
Farmers' Cooperative Creamery of Hurleyville.
Granges: Pomona and twelve subordinate granges.
Hudson River Fruit Exchange, Inc.
Jewish Farmers' Cooperative Creamery Association.
Kingston Milk Producers' Creamery, Inc.
Standard National Farm Loan Association.
Ulster County Agricultural Society.
Ulster County Dairymen's League.
Ulster County Farm Bureau Association.
Ulster National Farm Loan Association.

EDUCATIONAL FACILITIES

A state normal school is located at New Paltz. Approved courses in agriculture and home making are given at Highland.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Ellenville, Highland, Kingston, Marlboro, Phoenix, Saugerties, and Wallkill.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	496, 705
Number of farms	5, 022
Per cent of farm land improved	48.8

LIVE STOCK PRODUCTS

Milk sold	5, 616, 735 gal.
Cream sold	3, 571 gal.
Butter fat sold	748, 829 lbs.
Butter produced	602, 111 lbs.
Cheese produced	4, 975 lbs.
Eggs produced	1, 732, 271 doz.
Wool produced	3, 231 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	9, 724
Cattle	38, 321
Sheep	5, 721
Swine	14, 843
Poultry	265, 195

BEES

Number of colonies	2, 735

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	12, 421	433, 322
Oats	9, 583	225, 235
Wheat	1, 305	24, 627
Barley	47	656
Buckwheat	4, 819	93, 557
Rye	6, 905	103, 132

	Acres	Tons
Hay and forage	82, 569	90, 285

Special Crops:	Acres	Yield
Potatoes	4,282	293,415 bu.
Vegetables, other than potatoes	2,346	....
Dry edible beans	9	122 bu.
Dry peas	1	8 bu.

Fruits:		
Apples	240,933 trees	667,571 bu.
Peaches and nectarines	313,971 trees	196,190 bu.
Pears	95,392 trees	68,307 bu.
Plums and prunes	24,138 trees	10,990 bu.
Cherries	11,005 trees	6,353 bu.
Quinces	3,277 trees	320 bu.
Grapes	1,969,301 vines	13,358,000 lbs.
Small fruits	2,797 acres	6,371,934 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	4,589	4,025

LIVE STOCK AND POULTRY

Horses and mules	7,465	6,530
Cattle	29,014	25,203
Sheep	3,463	2,240
Swine	9,717	7,358
Poultry	339,566	267,795

BEES

Number of colonies	4,295	3,477

SELECTED CROPS

Cereals:	1917	1918	
	Acres	Acres	Bushels
Corn	10,625	8,436	233,002
Oats	12,163	8,444	211,665
Barley	124	349	2,497
Buckwheat	5,084	5,010	62,921
Wheat (winter)	2,491	2,446	34,442
Wheat (spring)	203	186	2,804
Rye	5,356	4,658	52,164

	1917	1918	
	Acres	Acres	Yield
Hay and Forage:			
Alfalfa	751	794	1,572 tons
Other hay	55,920	45,707	79,898 tons
Corn (ensilage)	2,849	2,804	18,445 tons
Corn (fodder)	....	1,218	....
Special Crops:			
Field beans	344	684	6,648 bu.
Cabbage	962	468	3,316 tons
Potatoes	4,825	5,138	207,548 bu.
Roots raised for stock food	....	297	....
Canning factory crops	450	258	....
Other vegetable and garden crops	1,514	2,077	....
Fruits:			
Apples	8,858	10,540	385,723 bu.
Peaches	2,646	3,685	110,398 bu.
Pears	1,861	1,718	94,886 bu.
Plums	231	348	49,228 lbs.
Cherries	392	1,113	221,894 lbs.
Quinces	....	42	1,354 bu.
Vineyard	3,872	3,293	8,815,631 lbs.
Small fruits	2,857	3,663	....

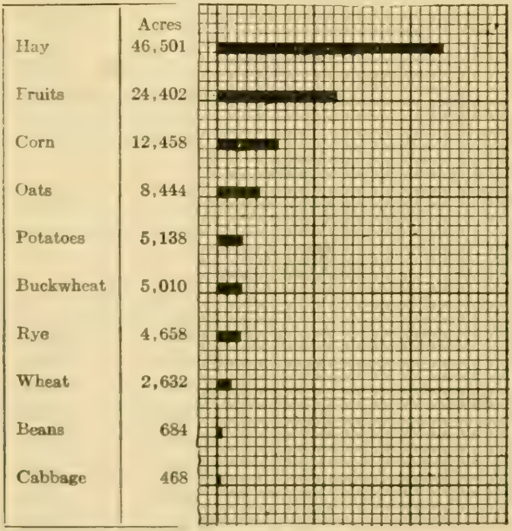
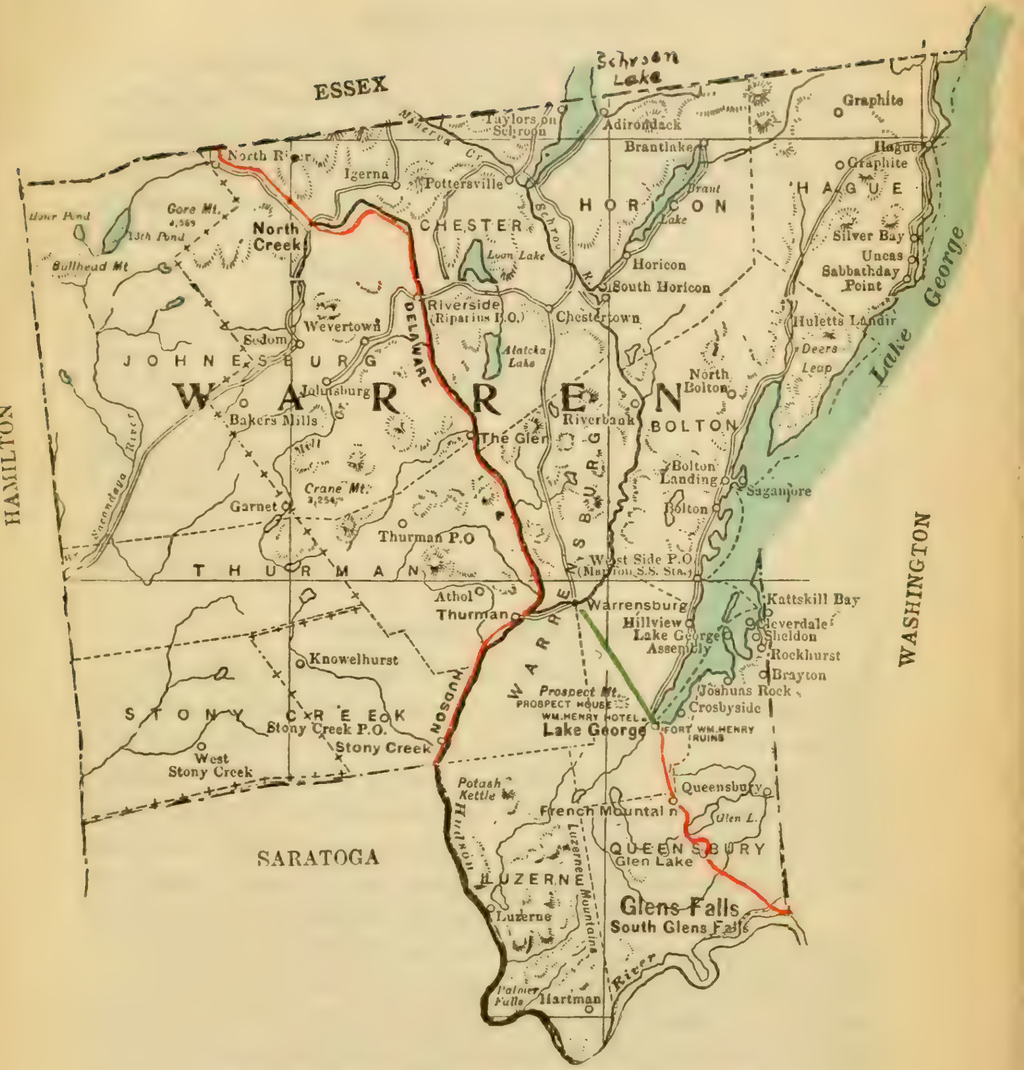


FIG. 161.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN ULSTER COUNTY


Schroon Lake
ESSEX
HAMILTON
WASHINGTON
SARATOGA
WARREN
JOHNESBURG
CHESTER
HORICON
HAGUE
BOLTON
THURMAN
STONY CREEK
WARRENSBURG
QUEENSBURY
LUZERNE
Taylors on Schroon
Adirondack
Graphite
Brantlake
Hague
Graphite
Brant Lake
Silver Bay
Uncas
Sabbathday Point
Horicon
South Horicon
Huletts Landing
Deers Leap
Lake George
North River
Igerna
Pottersville
Minerva Cr.
Schroon R.
Gore Mt. 4,369
13th Pond
Hour Pond
Bullhead Mt
North Creek
Loon Lake
Riverside (Riparius P.O.)
Chestertown
Wevertown
Sodom
Johnsburg
Bakers Mills
Delaware & Hudson
Alalcka Lake
North Bolton
Riverbank
The Glen
Mill Cr.
Crane Mt. 3,254
Garnet
Bolton Landing
Sagamore
Bolton
Thurman P.O
West Side P.O. (Marion S.S. Sta.)
Sacandaga River
Athol
Thurman
Warrensburg
Kattskill Bay
Cleverdale
Sheldon
Hillview
Lake George Assembly
Rockhurst
Brayton
Joshuas Rock
Crosbyside
Knowelhurst
Prospect Mt.
PROSPECT HOUSE
WM. HENRY HOTEL
Lake George
FORT WM. HENRY RUINS
Stony Creek P.O.
Stony Creek
West Stony Creek
Hudson R.
Potash Kettle
Queensbury
French Mountain
Glen L.
Glen Lake
Luzerne Mountains
Glens Falls
South Glens Falls
Luzerne
Palmer Falls
Hartman
River

Map of Warren County, Showing Townships
Red, railroads; green, electric roads

WARREN COUNTY

Warren County lies in the eastern part of the state, on the west shore of Lake George, and includes the southeastern foothills of the Adirondacks. It has an area of 562,560 acres. Its extent from north to south varies from 26 to 37 miles; from east to west it extends 22 to 35 miles. The population is shown in the following table:

POPULATION BY CITIES AND TOWNSHIPS

(Census of 1915)

Glens Falls (city)	16,323	Queensbury	2,721
Bolton	1,397	Stony Creek	719
Caldwell*	1.642	Thurman	807
Chester	1,630	Warrensburgh	2,311
Hague	943		
Horicon	1,056	Total	32,977
Johnsburgh	2,358		
Luzerne	1,070		

---

* Lake George, in the town of Caldwell, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Washington County in 1813. Its name commemorates General Joseph Warren, who was killed at Bunker Hill. This territory was probably never permanently occupied to any great extent by Indian tribes. It belonged more particularly to the Mohawks and formed a part of their hunting grounds. Later it became their memorable battlefield, and was the scene of some of the sanguinary battles between the French and English long before the arrival of settlers.

At the close of the French and Indian war the only settlements to the north of Albany were small hamlets at Fort Edward and Stillwater. In order to encourage further settlement a proclamation was issued offering inducements to those who would make applications for grants of land. This had the desired effect, and the patent of the town of Queensbury was granted in 1762, the year before the treaty of peace was signed.

During the Revolution this county was also the scene of exciting events, which was also the case during the War of 1812.

The Lake George battlefield, in the town of Caldwell, is now owned by the state and commemorates several events of the French and Revolutionary wars.

DEVELOPMENT OF INDUSTRY

When the settlers were permitted to return to their industries the growth of the county was rapid. Once his cabin was built, the early settler found his time entirely occupied in planting his small crop of corn or wheat, caring for the few live stock that he possessed, sugar making in the spring, cutting timber, or assisting at a "logging bee," which was a common method of clearing land. The forests in this region abounded not only with game, which formed an important part of the subsistence of the settler and his family, but with wild beasts, which — especially the wolves — were a constant source of annoyance for many years.

The county presented many attractions in its waterpower and its forests. The lumbering business soon became of great importance, especially in the town of Queensbury. Logs were driven down Schroon and Hudson rivers to Troy and Albany. There are records of timber rafts having been driven down to Albany as early as 1758. The excellent waterpower at Glens Falls led to the building of huge sawmills at that place, more especially after the opening of the Champlain Canal feeder. The opening of the Glens Falls feeder to boats was a most important event in the commercial history of the county. Previous to that time Caldwell had been the most thriving village in the county, but the commercial avenues were then diverted to Glens Falls. The latter place was also materially benefited by the opening of the railroad between this city and Fort Edward.

The timber lands of Warren County, being situated within teaming distance of water that will float logs to mills, are very valuable. Game, fish and fur farming, trapping, and summer boarders offer money-making opportunities in connection with forestry. The western part of Warren County, comprising about one-fourth of its entire surface, is included in the Adirondack Preserve. Forests abound also in several other sections.

The principal portions devoted to agriculture include a section north of the city of Glens Falls and a strip east of the Delaware and Hudson railway. After the giant pines were cut off, the area west of Glens Falls produced good crops of potatoes and grain. Fifty years ago this region supplied the rye straw that kept the paper mills running at Glens Falls and Hudson Falls. Continuous cropping to rye having decreased the yield, the paper mills changed to wood pulp, and the people left their farms for more profitable employment in the lumber woods or in mills. Since then most of this land has been idle, although a few successful farms prove that there are advantages in the sandy, well-drained soil, which permits its being worked immediately after a heavy rain. The fact that the earliest sweet corn, the only muskmelons, and the best alfalfa in the county are produced on this type of soil proves its value.

At the present time, on the level fields north of Glens Falls, hay, potatoes, and milk are the chief cash crops. Wheat and oats yield well. The demand for fresh vegetables in Glens Falls makes market gardening profitable, and celery and onions raised on the muck beds just outside the city limits are shipped by the carload. The townships of Chester, Horicon, Johnsburg, and Thurman form the sheep section of the county, as well as the maple sugar section. Mackintosh Red and similar apples can be grown extremely well in the townships of Caldwell, Bolton, and Hague, due to the tempering influence of the lake on the climate. Undeveloped muck beds on which onions and celery might be raised are to be found in the towns of Stony Creek and Warrensburg. In the latter town is land unusually well suited to the cultivation of potatoes.

CLIMATE AND RAINFALL

Warren County records were taken at Lake George, the elevation being 350 feet. The present observer is Charles Forsell.

Average dates for the last killing frost in spring and the first in fall are May 13 and October 1, respectively, giving a growing season of 141 days.

The following table covers the period 1907 to 1918, with the exception of the average temperature and precipitation, these records beginning in 1896:

Record of Temperature and Precipitation at Lake George

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	19.6	55	*1916	—28	1914	3.11	1.69	1909	15.7
February	18.4	52	*1915	—30	1908	3.64	3.00	1914	22.3
March	31.0	79	1910	—14	1912	3.60	1.91	1909	11.9
April	44.1	89	1915	5	1911	2.72	1.80	1914	3.1
May	55.5	96	1911	24	1914	3.21	1.70	1916	T
June	63.7	93	*1918	32	1912	4.23	3.85	1917	......
July	69.8	102	1911	36	1908	4.19	3.61	1917	......
August	66.8	97	1917	39	1912	4.08	2.24	1910	......
September	60.4	94	1913	26	1914	3.43	2.03	1916	......
October	49.7	82	1914	18	1914	3.65	3.24	1917	T
November	37.4	74	1914	—1	1914	2.88	2.12	1912	4.6
December	24.9	64	1914	—30	1917	3.42	1.73	1917	14.7
Year	45.1	102	1911	—30	1917*	42.16	3.85	1917	72.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is very broken and mountainous, less than one-half being susceptible of cultivation. The mountain ranges are continuous. In this county they are broader, less pointed, and generally less precipitous than those in Essex. The valleys are wider and more connected, and there are larger expanses of comparatively level land. A great number of peaks within the county rise to a height of 2,500 to 3,000 feet above tide. Many rocks are quarried for building purposes; limestone of an excellent quality is also quarried.

The drainage of the county is mostly through the Hudson River. This stream enters the county from Essex in two branches about ten miles apart, which, after flowing through nearly parallel valleys for about thirty miles, unite in one stream. The east branch is the outlet of Schroon Lake, and the west branch forms the drainage of the Adirondack Mountains. Lake George receives the drainage of the eastern part of the county.

The soil is mostly a thin sandy loam. The level lands west of Glens Falls are very sandy. The sides of the mountains have a thin soil, and usually a very scanty vegetation. In the valleys clay is mixed with sand and disintegrated rocks, forming a fertile soil.

DESCRIPTION BY TOWNSHIPS

BOLTON: The surface is principally occupied by high mountainous ridges. The highest peak is Fivemile Mountain in the northeastern part, 2,258 feet high. The mountains generally rise abruptly from the lake, but toward the west the surface assumes the character of a high, rolling upland. Lying among the hills are several lakes, the largest of which is Trout Lake in the southern part. Not more than half the town is susceptible of cultivation. The soil is a thin, sandy loam.

Products: General farm crops.

Average values of farm land range from $5 to $15 an acre.

CALDWELL: A range of mountains occupies the extreme western part. The central portion is a high, hilly region descending abruptly to the lake. Prospect Hill, west of the southern extremity of the lake, has an elevation of 2,000 feet above tide. South of this hill a low valley extends southwest through Caldwell and Luzerne to the valley of the Hudson, near the mouth of the Sacandaga River. The difference of a few feet in elevation would cause the waters of Lake George to flow into the Hudson. In this valley is a chain of small lakes. A narrow strip of low land lies on the border of the lake. The soil among the hills is a sandy loam, and in the lowlands it is a dark, rich, sandy and clayey loam.

Products: General farm crops.

Average values of farm land range from $5 to $15 an acre, except on Lake George, where values run much higher.

CHESTER: The surface is broken in the southern part by the Kayaderosseras and in the northwest by the Schroon range. A continuation of the valley of Schroon Lake extending to the west branch of the Hudson separates the ranges, and contains a chain of small lakes, of which Loon and Friends lakes are the principal ones. Schroon Lake is 807 feet above tide, the surrounding hills rising from 500 to 800 feet above its surface. A cave in Mt. Moxon is of local interest, as is also the natural bridge on

Stone Bridge Creek near the northern border of the town. The soil is generally light and sandy. This is a portion of the sheep and maple sirup sections of the county.

Products: Dairy products, sheep and maple sirup.

Average values of farm land range from $5 to $15 an acre.

HAGUE: The surface is very mountainous, only about one-fourth being susceptible of cultivation. The mountains along the lake generally descend abruptly to the edge of the water. The narrow valleys of Trout and Northwest Bay brooks form the line of separation between the two ranges. The highest peaks rise from 2,000 to 2,500 feet above tide; on the shore of the lake in the northeast corner is another peak of nearly the same elevation. The soil is a light, sandy loam.

Products: Mackintosh Red and similar apples.

Average values of farm land range from $5 to $15 an acre.

HORICON: The surface is largely occupied by two branches of the Kayaderosseras Mountains, which are here divided by the valley of Brant Lake. In the north and east these ranges rise in sharp, rocky peaks 1,600 to 2,000 feet above tide, but in the south and west they sink into a hilly plateau region. About one-half the surface is arable. Among the hills are great numbers of small lakes. The soil is a sandy loam.

Products: Sheep, maple sirup, dairy products, oats, corn and potatoes.

Average values of farm land range from $5 to $15 an acre.

JOHNSBURG: The surface is very broken and mountainous. The Schroon range occupies the northern and central parts; a spur of the Kayaderosseras range extends into the south. Crane Mountain, the highest peak of the latter range, is 3,254 feet above tide. The greater part of the town is too broken and rough for cultivation. The arable land is confined to the narrow valleys. The soil is a sandy and clayey loam.

Products: Sheep, dairy products and maple sirup.

Average values of farm land range from $1 to $20 an acre.

LUZERNE: The surface in the north and south is occupied by two ranges of the Luzerne Mountains separated by the valley

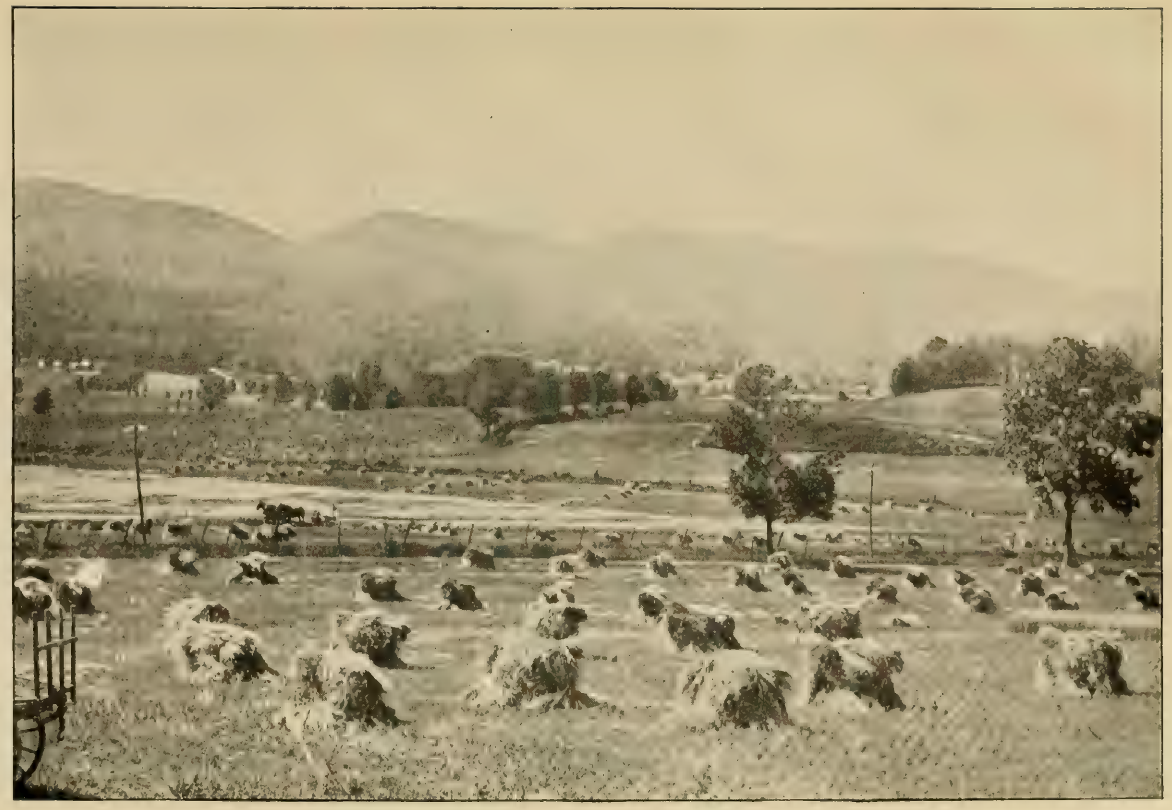


Fig. 162.— Farm View Near Glens Falls

extending southwest from the southern end of Lake George. A chain of small lakes rise along its course. In them two streams take rise, one of which flows into Lake George and the other into the Hudson. A peak known as Potash Kettle rises in the northern part to a height of 1,600 feet. The soil is sandy and free from stone on the flats. The summer camps and the paper mills at Luzerne and Corinth furnish a market for most farm produce.

Products: Maple sirup and timber.

Average values of farm land range from $5 to $15 an acre.

QUEENSBURY: The surface is occupied in the western part by the Luzerne Mountains, and in the extreme north by French Mountain — a high, rocky bluff rising abruptly from the surface of Lake George to a height of 2,500 to 3,000 feet above tide. The central and southern parts are rolling, gradually declining toward the south. The soil is a light sandy loam in the interior and a deep, tough clay on the river. This town has special advantages for farming, as mountains rise abruptly 1,000 feet above the level land, forming a semicircle to the north and west, thus affording protection from the cold, driving winds. When first cleared, about 10,000 acres of this land just below the mountains produced large quantities of potatoes.

Average values of land in sand plains and mountains range from $5 to $15, where not covered with timber; and from $30 to $75 in good farming sections north of Glens Falls.

STONY CREEK: Through the center of the town extend mountain ranges, several peaks of which attain an elevation of from 2,000 to 2,500 feet. The valleys of East and West Stony creeks are narrow ravines forming a natural pass between the valleys of the Hudson and Sacandaga. Much of the town is a wilderness, in many parts frequented by deer, and a large part of it is owned by the state. Fish are plentiful in the lakes and streams. Some of the best sugar camps are located in this town. The soil is a light, sandy loam, and although stony, it yields fair crops. There are muck beds as yet undeveloped, where celery and onions could be raised. In general, farming is supplementary to forestry, with the exception of a few good farms on the river flats and in the vicinity of Knowlhurst.

Products: Pine logs and pulp wood.

Average values of denuded timber lands range from $1 to $10 per acre.

THURMAN: The surface in the western part is a broken upland; in the eastern part it is a hilly plateau. Several peaks in the town rise from 2,000 to 2,500 feet above tide. Among the hills are numerous small lakes, and the Hudson River flows on the east border. The soil is a light, sandy loam. This town is located in the sheep and maple sirup sections.

Products: Hay, butter, wool, meat, potatoes, and maple sirup.

Average values of farm land range from $5 to $15 an acre, including timber twenty years old.

WARRENSBURG: The northern portion is a rolling plateau 1,000 to 1,600 feet above tide. The southern part is an immense mountain mass with several summits 2,000 to 2,200 feet above tide. The Hudson River forms the western border and the Schroon River flows along the eastern border. About two-thirds of the town is arable. The Schroon River valley forms a very attractive stretch of land about eight miles long and a half-mile wide, level and free from stone. This is excellent potato land. A rich muck swamp lying near the center of the county has possibilities in development for the raising of onions and celery.

The town contains excellent pasture land for sheep and cattle.

Products: General farm crops.

Average values of farm land range from $5 to $50 per acre.

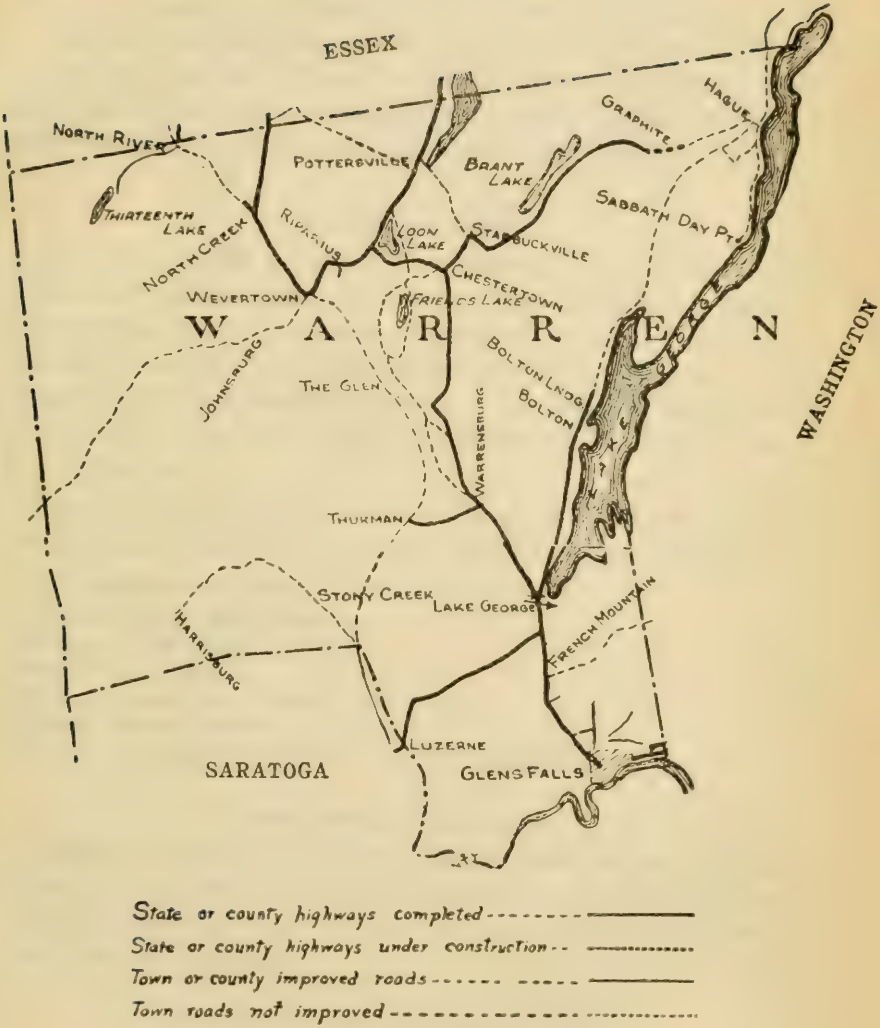
MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Rail and Electric Roads

Two lines of the Delaware and Hudson enter this county, one of which passes north through the center to North Creek; the other enters near Glens Falls and extends to Lake George.

An electric road runs from Glens Falls through Lake George to Warrensburg.


ESSEX
HAMILTON
WASHINGTON
SARATOGA
W A R R E N
North River
Thirteenth Lake
North Creek
Riparius
Pottersville
Brant Lake
Graphite
Hague
Sabbath Day Pt.
Loon Lake
Starbuckville
Chestertown
Friends Lake
Wevertown
Johnsburg
The Glen
Bolton Lndg.
Bolton
Warrensburg
George
Thurman
Stony Creek
Lake George
French Mountain
Harrisburg
Luzerne
Glens Falls
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

Improved Highways

Two improved highways lead from Saratoga County north through the center of Warren County into Essex. These two roads are connected at various points by macadam roads.

A section runs along the greater part of the west shore of Lake George and another extends northeast from Chestertown to Graphite. There are in the county 94 miles of completed improved highways with 5 miles additional under construction.

AVAILABLE MARKETS

Glens Falls is the principal local market. Manufactures are of considerable importance in this city, especially lumber, paper, and Portland cement and lime. There are also some large shirt factories. During the summer season various resorts near Lake George also furnish excellent markets. The summer resorts and lumber camps furnish the principal markets for the southwestern part of the county.

Glens Falls, Hudson Falls, Lake George, and the summer resorts consume nearly all the milk produced in the county.

The agricultural organizations are as follows:

Adirondack Beekeepers' Association.
Granges: 3 subordinate granges.
Warren County Fair.
Warren County Farm Bureau Association.
Warren County Growers' Association.
Warren County Sheep Growers' Cooperative Association, Inc.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Bolton Landing, Chestertown, Glens Falls, Luzerne, Lake George, North Creek, and Warrensburg.

STATUS OF AGRICULTURE IN 1910

(Taken from U S. Census of 1910)

Land in farms	250,349 acres
Number of farms	1,865
Per cent of farm land improved	40.0

LIVE STOCK PRODUCTS

Milk sold	503,938 gal.
Cream sold	1,766 gal.
Butter fat sold	171,264 lbs.
Butter produced	312,464 lbs.
Cheese produced	100 lbs.
Eggs produced	302,342 doz.
Wool produced	8,864 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	3,221
Cattle	8,630
Sheep	12,111
Swine	2,070
Poultry	48,354

BEES

Number of colonies	816

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	2,205	60,750 bu.
Oats	1,612	39,595 bu.
Wheat	2	47 bu.
Barley	24	496 bu.
Buckwheat	1,966	30,524 bu.
Rye	323	3,125 bu.
Hay and forage	36,012	25,345 tons
Special Crops:		
Potatoes	1,882	163,673 bu.
Vegetables, other than potatoes	844	....
Dry edible beans	51	431 bu.
Dry peas	5	72 bu.
Fruits:		
Apples	75,557 trees	63,514 bu.
Peaches and nectarines	181 trees	....
Pears	795 trees	473 bu.
Plums and prunes	2,578 trees	1,161 bu.
Cherries	2,578 trees	389 bu.
Quinces	6 trees	2 bu.
Grapes	1,165 vines	23,117 lbs.
Small fruits	62 acres	87,185 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,669	1,565

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	2,656	2,367
Cattle	9,284	8,375
Sheep	10,830	7,242
Swine	2,396	1,847
Poultry	57,715	43,869

BEES

	1917	1918
Number of colonies	764	648

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	2,236	2,978	38,279 bu.
Oats	2,256	1,687	38,376 bu.
Barley	44	26	171 bu.
Buckwheat	1,263	1,594	19,857 bu.
Wheat (winter)	159	44	550 bu.
Wheat (spring)	36	46	403 bu.
Rye	432	304	2,334 bu.
Hay and forage:			
Alfalfa	95	198	193 tons
Other hay	27,246	26,972	16,362 tons
Corn (ensilage)	1,234	863	5,914 tons
Corn (fodder)	....	349	....
Special Crops:			
Field beans	258	423	2,327 bu.
Cabbage	91	103	1,446 tons
Potatoes	1,676	1,976	137,238 bu.
Roots raised for stock food	....	248	....
Canning factory crops	....	4	....
Other vegetables and garden crops	633	1,230	....

	1917	1918	
Fruits:	Acres	Acres	Yield
Apples	2,879	1,868	26,991 bu.
Pears	4	25	38 bu.
Plums	22	21	4,050 lbs.
Cherries	21	17	1,198 lbs.
Vineyard	8	11	996 lbs.
Small fruits	71	165	....

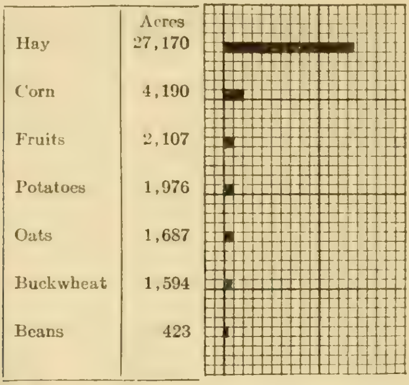
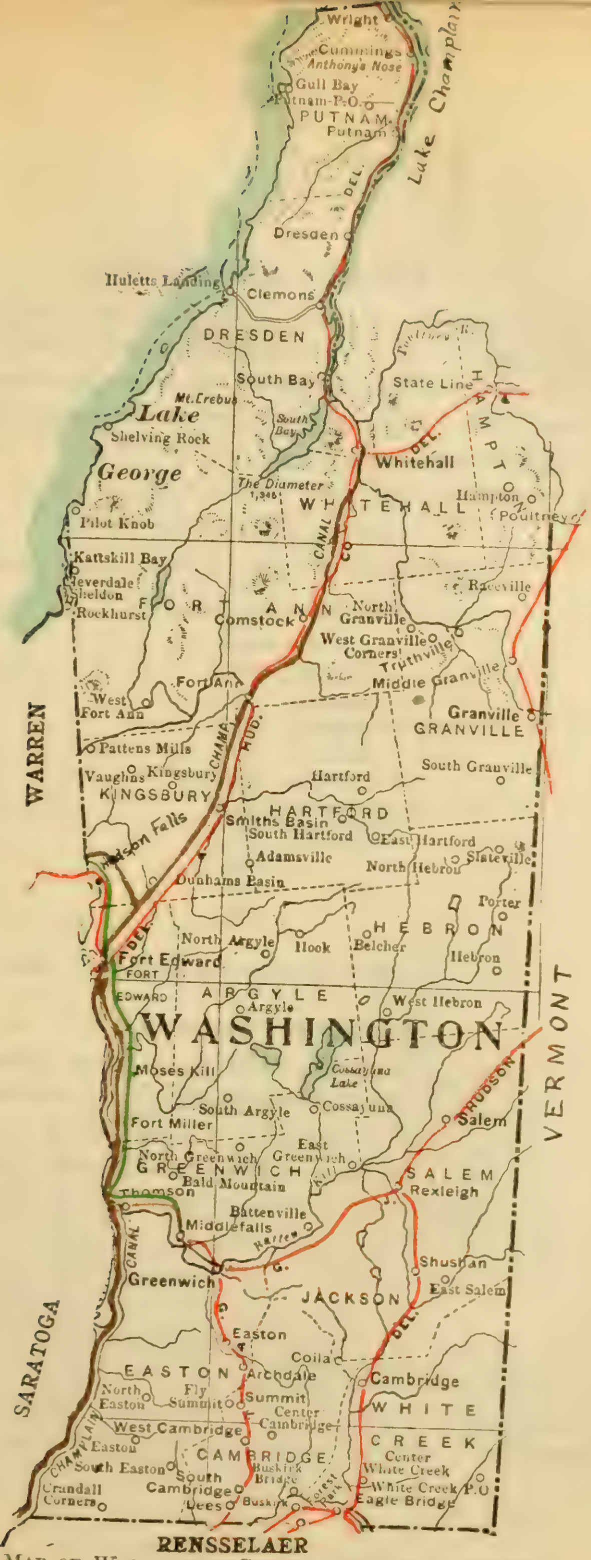


FIG. 163.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN WARREN COUNTY


Wright
Cummings
Anthony's Nose
Gull Bay
Putnam P.O.
PUTNAM
Putnam
Lake Champlain
DEL.
Dresden
Huletts Landing
Clemons
DRESDEN
Poultney R.
South Bay
Mt. Erebus
Lake
South Bay
State Line
HAMPTON
Shelving Rock
George
DEL.
Whitehall
The Diameter 1,346
WHITEHALL
Hampton
Poultney
Pilot Knob
CANAL
Kattskill Bay
Raceville
Cleverdale
Sheldon
Rockhurst
FORT ANN
Comstock
North Granville
West Granville Corners
Truthville
Middle Granville
Fort Ann
West Fort Ann
Granville
GRANVILLE
WARREN
Pattens Mills
CHAMP.
HUD.
Vaughns
Kingsbury
KINGSBURY
Hartford
South Granville
Hudson Falls
HARTFORD
Smiths Basin
South Hartford
East Hartford
Adamsville
North Hebron
Slateville
Dunhams Basin
Porter
HEBRON
North Argyle
Hook
Belcher
DEL.
Fort Edward
Hebron
FORT EDWARD
ARGYLE
Argyle
West Hebron
WASHINGTON
VERMONT
Moses Kill
Cossayuna Lake
South Argyle
Cossayuna
HUDSON
Salem
Fort Miller
North Greenwich
East Greenwich
GREENWICH
SALEM
Rexleigh
Bald Mountain
Thomson
Battenville
Middlefalls
Battenkill
CANAL
Greenwich
Shushan
East Salem
JACKSON
SARATOGA
DEL.
Easton
Coila
EASTON
Archdale
Cambridge
North Easton
Fly Summit
Summit
Center Cambridge
WHITE
West Cambridge
Easton
CREEK
CAMBRIDGE
Center White Creek
CHAMPLAIN
South Easton
South Cambridge
Buskirk Bridge
White Creek P.O.
Crandall Corners
Dees
Buskirk
Eagle Bridge
RENSSELAER

Map of Washington County, Showing Townships
Red, railroads; green, electric roads; brown, canals

WASHINGTON COUNTY

Washington County is situated on the eastern border of the state. Vermont forms the eastern boundary, Lakes George and Champlain lie on either side of the northern part, and the Hudson River flows along its southwestern boundary. The area is 535,680 acres. From east to west the county measures approximately 17 miles, except in the northern part, where it has a width of 4 or 5 miles; from north to south 60 miles.

The population is shown in the following table:

Population by Townships

(Census of 1915)

Argyle	1,674	Hebron	1,356
Cambridge	1,651	Jackson	988
Dresden	514	Kingsbury*	7,288
Easton	2,118	Putnam	579
Fort Ann	2,302	Salem	2,473
Fort Edward	5,731	White Creek	2,275
Granville	6,381	Whitehall	5,462
Greenwich	4,321		
Hampton	671	Total	46,955
Hartford	1,171		

---

* Hudson Falls, in the town of Kingsbury, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Albany County in 1772, and called Charlotte County, for Queen Charlotte, wife of George III of England. At that time it included not only the greater part of Washington County, but also Warren, Essex, Clinton, and part of Franklin County and eastward to the Green Mountains.

After the Revolution the colonists chose the present appellation, and this county became the first in the United States to receive the name of Washington.

One of the three great war paths over which the Five Nations passed to wage war with their enemies was the Canadian trail. This led through Washington County to Lake Champlain, which afforded a water route to the heart of Canada. Over this same war path, along the valley of Wood Creek — through which the Champlain Canal now extends — the legions of Burgoyne moved to impending ruin.

But few native Indians remained in the county on the arrival of the whites, although distinct Indian trails and numerous implements of their arts proved that they had formerly occupied it in large numbers.

Both French and English settlements were begun in the county previous to the close of the French and Indian War, the pioneer settlement being made by the Schuylers in what is now the town of Easton, more than a century after it was first explored. The constant dangers to which the colonists were exposed, however, led to the abandonment of Washington County by the English in 1747, after an occupation of not much more than ten years. No attempt at agricultural improvement was undertaken until after 1760.

Fort Edward, which was known as the "great carrying place," was a very important depot for arms and rendezvous for armies in the great expeditions against Canada and it served as a vast hospital for the sick and wounded until 1760, when it was allowed to go to decay. During the Revolution it was again occupied by both British and Americans.

Upon the advance of Burgoyne in 1777 the terrors and desolation of war again spread over the region. Soon after the close of the Revolution, however, the county was rapidly settled by emigrants from the New England States, and from Scotland and Ireland.

Fort Edward is located near the scene of the tragic death of Jane McCrea, which occurred during the Revolution. This event was to the colony of New York, and to Washington County especially, what the battle of Lexington was to the New England colonies, as it led the inhabitants to unite more firmly against the invaders.

In the town of Fort Ann five forts were built and destroyed during the early struggle for existence. The town also has the distinction of manufacturing the first friction match, called the "Weller Match — Blue Head."

For ten years previous to 1823 the turnpikes were the main avenues of traffic in this county. At about that time the Champlain Canal, which is next in importance to the Erie Canal, was constructed. While in process of construction great alarm was felt among farmers that on its completion the business of hauling would be destroyed and there would be no sale for horses or oats, but it was later discovered that such fears were groundless.

The supremacy of the canal in the history of the county drew toward a close in 1848, when the first railroad train ran from Saratoga to Whitehall. Railroad building was checked by the outbreak of the Civil War, but since then a number of roads passing through the county have been completed.

DEVELOPMENT OF INDUSTRY

In the northern part of the county, lumbering early received considerable attention. The southern part, being well adapted for various agricultural products, was devoted to the production of corn, wheat, flax, potatoes, and garden seeds. Flax was grown for family use until the War of 1812, at which time the high price of linen induced the farmers of Cambridge to cultivate flax on a commercial scale. It continued to be one of the leading crops of the southern part of the county until about 1880. Twenty years later it had disappeared as a farm crop, and is now replaced by corn, rye, and potatoes. Both flax and potatoes were introduced into Washington County from New Hampshire and Massachusetts by the Scotch-Irish, these people having previously brought them to New England from their former homes in the northern part of Ireland.

The keeping of sheep for wool became important at an early date, and the first carding machine used in the state was erected at Middle Granville in 1808. As England looked with disapproval on the home manufacture of woolen material, the machine was obtained secretly from England and used for some time in private. The quality of wool was improved by the importation of Merino blood from Spain at about 1810, and wool production soon became the leading industry of the county. In 1845 there were in the county 254,866 sheep, and the wool clip amounted to 579,056 pounds.

Although the number of sheep has decreased, Washington County still stands first in sheep raising among the counties in the eastern part of the state. The towns of White Creek and Cambridge lead in this industry.

Granville and Kingsbury have the largest number of cows, although the county as a whole is predominantly a dairy section. The rapid extension of this industry for the past twenty years, especially along the lines of market milk production, has wrought a great improvement in farm buildings. Many of them are roofed with slate, this material being easily available from the quarries at Granville.

Hay is the principal cash crop; oats the leading plowland crop, and potatoes the chief cultivated crop.

Washington County has originated several varieties of potatoes. Two standard market varieties that were originated in the town of Hebron are the American Giant and the Hebron Beauty.

CLIMATE AND RAINFALL

Climatological records for Washington County were taken at the Carvers Falls station, at an elevation of 126 feet.

Average dates for the last killing frost in spring and the first in fall are May 14 and September 29, respectively, giving a growing season of 138 days.

The following table covers the period from 1898 to 1912:

RECORDS OF TEMPERATURE AND PRECIPITATION AT CARVERS FALLS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	17.7	60	1906	—37	1904	2.28	1.80	1909	14.6
February	16.1	60	1908	—35	1908	2.72	2.45	1900	16.7
March	29.3	72	1905	—22	1912	3.19	2.49	1900	9.9
April	43.2	86	1908*	7	1911	2.27	1.51	1901	2.9
May	56.0	94	1911	21	1903	2.84	1.80	1906	T
June	63.8	97	1901	33	1910	3.84	3.38	1905	......
July	69.0	99	1911	37	1907	3.19	2.25	1905	......
August	66.2	95	1899	38	1909	3.51	2.87	1910	......
September	59.8	91	1898	27	1904	3.53	2.30	1904	......
October	42.7	84	1910	16	1909	2.75	2.75	1902	T
November	35.2	69	1900	0	1904	2.14	1.53	1901	4.5
December	22.4	65	1901	—25	1902	2.55	1.86	1907	10.7
Year	43.5	99	1911	—37	1904	34.81	3.38	1905	59.3

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface consists of ridges extending northeast and southwest, and the valleys between. The declivities of the southern group of ranges are usually steep and, except where broken by ledges, are arable to their summits. They gradually rise toward the east, reaching the culminating point near the eastern border of the county. The highest summits are 1,000 to 1,200 feet above tide.

The ridges are composed of slate rock, ledges of which crop out along their whole extent. In Granville and Hebron many of these ledges are quarried, and furnish stone much valued for roofing, building and ornamental purposes. The soil consists chiefly of disintegrated slate and is very fertile. Although these elevated lands are best adapted to pasture, they produce good crops of oats, rye and hay. The valleys between them are fertile and easily tilled, and are well adapted to a variety of crops.

The highlands in the northern part of the county belong to the Palmertown Mountain range, and their rocks consist of gneiss, granite, sandstone, and impure limestone. This range is not so well adapted to crop growing as is the central part of the county. The highest peak in the county is Black Mountain (2,665 feet) in the town of Dresden. The northern towns of the county separate Lakes Champlain and George.

The Hudson River forms the southern half of the western border of the county. A rich intervale from one-half to one mile in width, bordered by a series of clay bluffs twenty to sixty feet high, extends along its course. Most of the streams of the county are tributaries of the Hudson. Wood Creek, a deep, sluggish stream, flows into Lake Champlain, draining a valley, the soil of which is mostly a hard, stiff clay. There are several other streams in the county, including Batten Kill, Black Creek, and Poultney River. Among the hills in the interior are several small lakes, the principal of which is Cossayuna Lake, in Argyle.

DESCRIPTION BY TOWNSHIPS

ARGYLE: The surface is rolling in the north and west; broken and hilly in the south and east. In the northern part Tamarack Swamp covers several hundred acres. Cossayuna Lake is a beautiful sheet of water three miles long, lying in a narrow valley in the southeastern part of the town. The soil is generally a productive slaty or gravelly loam. This town leads in the number of horses, brood sows, and ducks kept, and in number of colts raised. It also excels in acreage of peas and yield of beans.

Products: Oats, hay, rye, potatoes (including seed), beans, apples, pears, swine and poultry.

Average values of farm land range from $30 to $75 an acre.

CAMBRIDGE: The surface is hilly in the north and rolling in the south. The eastern part embraces a portion of the valley of the Owl Kill, celebrated for its beauty. The soil is generally a gravelly, sandy loam. This town stands first in acreage and yield of potatoes and in cords of wood cut. It also ranks second in number of sheep and pure-bred cattle.

Products: Dairy products, potatoes, sheep, alfalfa and ensilage corn.

Average values of farm land range from $40 to $75 an acre.

DRESDEN: The surface is hilly and mountainous, the highest peaks of the county lying within this town. Black Mountain, the highest peak, rises 2,665 feet above sea level. Lake Champlain lies on the east and Lake George on the west. There is a narrow strip of arable land along Lake Champlain. The principal occupation in the interior is lumbering. This town has the largest acreage of alfalfa, which on many farms comes in naturally and thrives well.

Products: Alfalfa, potatoes, apples and maple sugar.

Average values of farm land range from $25 to $50 an acre.

EASTON: The surface is a broad intervale in the west, rising to high hills in the east. The central and southern parts are included in a plateau region. An extensive swamp known as "The Vly" lies on the eastern border. The soil is an excellent quality of sandy and gravelly loam. Limestone is abundant in various parts of the town. There is an extensive paper- and pulp-manufacturing business on the Batten Kill. The town holds first place in number of hens, geese, and pigs kept and in acreage and yield of oats.

Products: Dairy products, swine, poultry and general farm crops.

Average values of farm land range from $30 to $60 an acre.

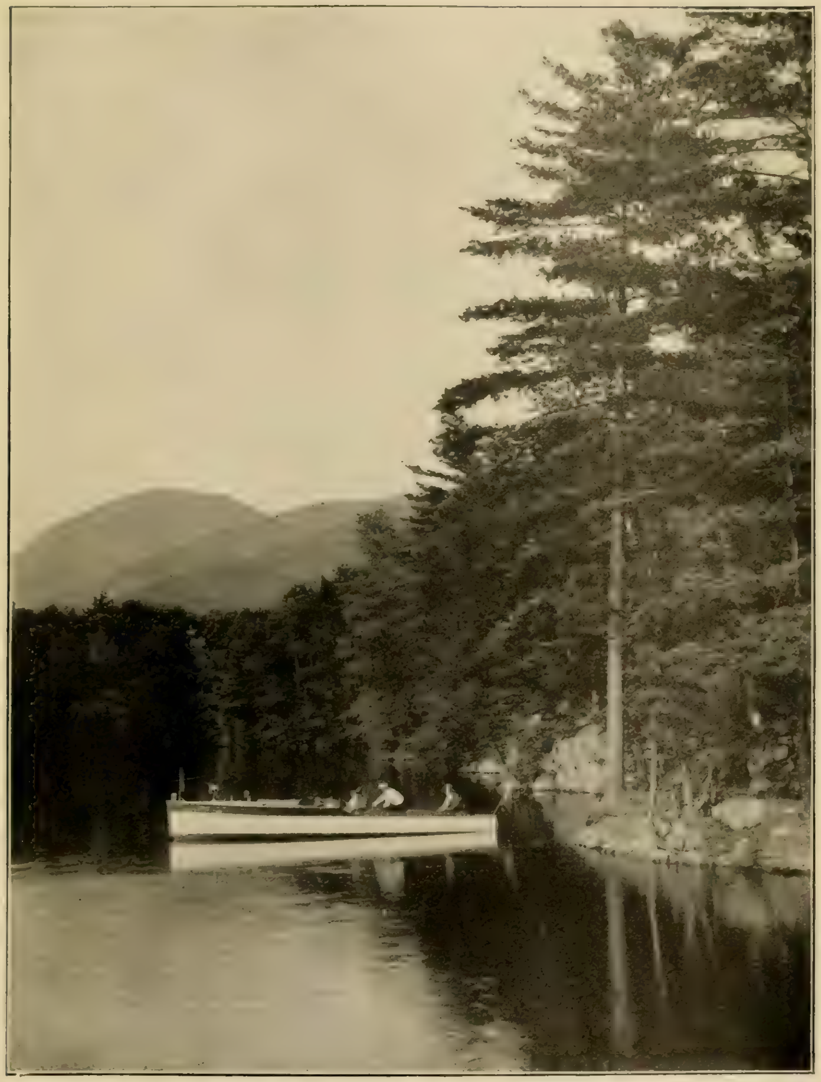


Fig. 164.— Paradise Bay, Lake George, Washington County

FORT ANN: The central and western parts are occupied by the ranges of the Palmertown Mountains, separated by valleys of the streams. In the latter the soil is a gravelly loam, alternating with a stiff clay. East of Wood Creek the surface is level or rolling. Great Meadow Prison is located at Comstock, where there is a state farm of 912 acres. The honor system has been put into practice with the prisoners and is meeting with good success. Fort Ann stands first in number of bees and beef cattle and in extent of farm woodlots. This town boasts the only "grade A" milk plant in the county.

Products: Milk, hay and oats.

Average values of farm land range from $25 to $100 an acre.

FORT EDWARD: The surface is a wide intervale along the Hudson, rising toward the east to a height of 200 to 300 feet in an undulating upland. Near the river the soil is a mixture of heavy clay and alluvium, but farther east it is a sandy or gravelly loam. The dam at Fort Edward furnishes considerable power for manufacturing and milling purposes.

Products: Hay, milk and oats.

Average values of farm land range from $15 to $100 an acre.

GRANVILLE: The surface is undulating and hilly, the ridges generally sloping gradually to their summits, elevated 500 to 1,000 feet above tide. Quarries of high-grade green and red roofing slate have been opened in various places. Wide intervales of excellent land extend along the principal streams, the soil being a slaty and gravelly loam. Granville has the most dairy cows and the most pure-bred cattle, and produces the largest amount of milk. The two reasons for the development of this industry are probably to be found in the large acreage of rough pasturage land and in the exceptionally good milk markets of Boston and New York. This town also leads in the production of maple sirup and sugar.

Products: Dairy products, corn and maple products.

Average values of farm land range from $30 to $75 an acre.

GREENWICH: The surface is rolling, rising into ranges of hills 500 to 800 feet above tide, which extend through the central and eastern parts of the town. On the Batten Kill are two considerable falls, one of which is seventy-five feet high. The soil is a slaty, gravelly loam, with patches of clay. The town is more extensively engaged in manufacturing than any other in the county, including woolen, grist, saw, and plaster mills. The W. Eddy Plow Company, one of the oldest plow manufactories in the country, is located at Greenwich. This town ranks second in the acreage of rye and the yield of corn.

Products: Rye, corn, milk and apples.

Average values of farm land range from $30 to $75 an acre.

HAMPTON: A range of hills 800 to 1,000 feet above tide and for the most part covered with forests, extends through the central and eastern parts of the town. Along the Poultney River, which separates the town from Vermont, is a wide intervale of fine sand. The soil is a gravelly loam, interspersed with clay. The intervale is alike fertilized and desolated by the frequent overflows of the stream. Although Hampton is the second smallest town in the county, it produces the second largest amount of maple sugar.

Products: Dairy and maple products and general farm crops.

Average values of farm land range from $10 to $50 an acre.

HARTFORD: The surface is broken and hilly in the southeast and level or gently undulating in the center and northwest. Slate and limestone of an excellent quality are found among the hills. The soil in the southeast is a rich, slaty loam, and that in the northwest is a heavy clay. This is one of the interior towns and, therefore, with the advent of good roads and automobiles, the agriculture has changed rapidly. Sheep have become fewer, while dairies have increased extensively. Most of the milk is now shipped instead of being made into butter and cheese. The number of silos in use has more than doubled within the last five years.

Products: Dairy products, hay, grain, apples and pears.

Average values of farm land range from $25 to $60 an acre.

HEBRON: The surface is generally hilly, the summits rising from 1,000 to 1,400 feet above tide and being mostly crowned with forests. The ranges of hills are separated by valleys and Black Creek is its principal western branch. The soil is a sandy and slaty loam of a light, porous nature, easy of cultivation and well adapted to resisting the extremes of wet and drouth. In the hilly region is considerable rocky waste land. Slate is quarried in the north and east. Dairying is highly specialized; milk, butter and cheese are cash crops. The type of farming has changed but little in this town.

Products: Dairy products, potatoes and poultry.

Average values of farm land range from $25 to $60 an acre.

JACKSON: The surface is hilly, the highest summits rising from 1,000 to 1,300 feet above the valleys, and generally crowned with forests. In the valley between the hills that border immediately on Batten Kill and those farther west are several small lakes, surrounded by hills, forests and fine cultivated farms. The soil is a slaty loam, very productive.

Products: Corn, sheep and dairy products.

Average values of farm land range from $20 to $60 an acre.

KINGSBURY: The surface is level or gently undulating. A range of hills about 150 feet high occupies the extreme eastern edge. At Baker's Falls on the Hudson, the river flows over a steep descent of ledges, affording excellent waterpower.

In the valley near the headwaters of Wood Creek there is an extensive muck area known as the "swamp." Here some farmers grow from 2,000 to 8,000 bushels of potatoes annually, and crop their land continuously without rotation. In some other portions of the valley of Wood Creek the soil is a hard stiff clay. A sandy or gravelly loam prevails throughout many sections of the town. Limestone is quarried extensively. This town leads in total acreage of crops. It has the largest acreage of silage corn, buckwheat, and beans, excelling also both in acreage and yield of spring wheat and in number of young stock kept.

Products: Potatoes, hay and milk.

Average value of farm land in the muck area range from $300 to $500 an acre; in other sections the range is from $40 to $75 an acre.

PUTNAM: The surface is generally rocky and broken. Sections of arable land extend along the valleys of the small streams and the borders of Lake Champlain. The soil is generally a hard gravelly loam.

Products: Dairy products and fruit.

Average value of farm land range from $15 to $25 an acre.

SALEM: The surface is covered with moderately elevated ridges and narrow valleys extending in a northeast and southwest direction. The summits of the hills are usually forest-covered. There is very little waste land in the town. The soil is a rich slaty or gravelly loam. This town raises more turkeys than any other in the county.

Products: Hay, corn, oats, dairy products, poultry and potatoes.

Average values of farm land range from $50 to $100 an acre.

WHITE CREEK: The surface is gently rolling in the south and broken and hilly in the center and north. Hoosick River and White Creek are the principal streams. The soil is a fine quality of gravelly loam. This town raises more sheep than any other in the county. The Jerome B. Rice Seed Company is in the village of Cambridge.

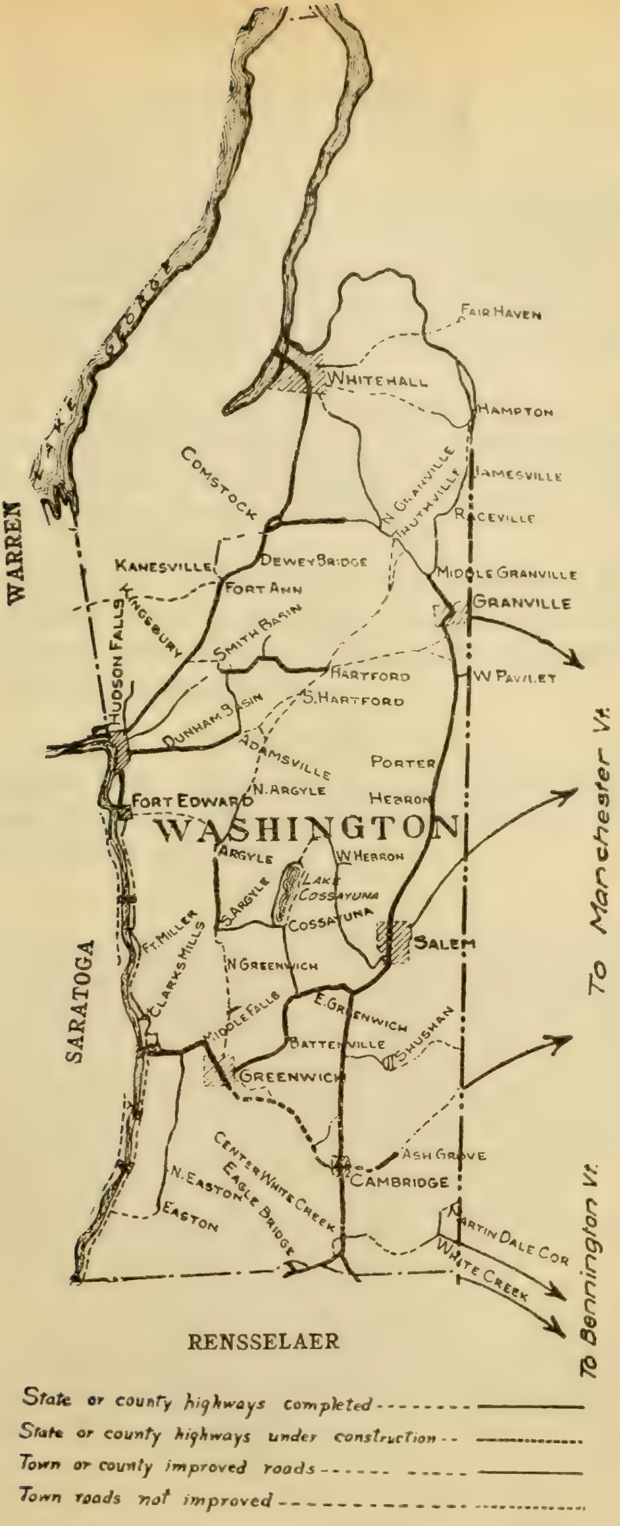
Products: Wool, dairy products, potatoes and silage corn.

Average value of farm land range from $10 to $60 an acre.

WHITEHALL: The surface is mountainous in the west and level and undulating in the center and east. Near the mouth of Wood Creek is a fall which furnishes valuable waterpower. The soil is principally a hard, stiff clay, and best adapted to grazing. Considerable manufacturing of lumber, machinery, and carpets is carried on in Whitehall. The railroad, canal and lake trade give this place commercial importance. Although this town holds first place in the acreage and yield of barley, the growing of small grains and potatoes as cash crops has mostly given way to dairying and the growing of forage crops. Hay and market milk are the chief products sold.

Products: Dairy products, hay, barley and potatoes.

Average values of farm land range from $20 to $60 an acre.


LAKE GEORGE
WARREN
SARATOGA
RENSSELAER
WASHINGTON
FAIR HAVEN
WHITEHALL
HAMPTON
COMSTOCK
N. GRANVILLE
TRUTHVILLE
JAMESVILLE
RACEVILLE
KANESVILLE
DEWEY BRIDGE
FORT ANN
MIDDLE GRANVILLE
GRANVILLE
KINGSBURY
HUDSON FALLS
SMITH BASIN
HARTFORD
W PAWLET
S. HARTFORD
DUNHAM BASIN
ADAMSVILLE
PORTER
N. ARGYLE
HEBRON
FORT EDWARD
ARGYLE
W HEBRON
LAKE COSSAYUNA
COSSAYUNA
S. ARGYLE
FT. MILLER
CLARKS MILLS
SALEM
N GREENWICH
MIDDLE FALLS
E. GREENWICH
SHUSHAN
BATTENVILLE
GREENWICH
CENTER WHITE CREEK
EAGLE BRIDGE
N. EASTON
EASTON
ASH GROVE
CAMBRIDGE
MARTIN DALE COR
WHITE CREEK
To Manchester Vt.
To Bennington Vt.
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The main line of the Delaware and Hudson railroad between Albany and Montreal passes through the west side of the county. A branch extends from Eagle Bridge on the south side of the county to Rutland, Vermont. This road also runs milk service to New York City and over the eastern division to New England points.

It affords excellent facilities for shipping to northern points and also connects with the mining region of eastern Pennsylvania. It makes connections with the Rutland Railroad for Vermont and Canadian points and with the Boston and Maine for Boston and other eastern markets.

The Greenwich and Johnsonville railroad extends from Thompson to the eastern branch of the Delaware and Hudson, and from Greenwich south to Johnsonville, in Rensselaer County, where it connects with the Boston and Maine.

Electric Roads

The Hudson Valley electric line passes through the west end of the county from Glens Falls to Albany, with a branch extending from Thompson to Greenwich.

Waterways

The Champlain Canal passes through the county from Waterford to Whitehall, connecting the Hudson with Lake Champlain, and completing the waterway from New York City to points on Lake Champlain and the St. Lawrence River. It extends from twenty to twenty-five miles along the boundary, and about twelve miles of its length passes through the county. This canal, with Lake Champlain, gives the county a waterway throughout its entire length.

During the summer season transportation lines are maintained from end to end of Lake George.

Improved Highways

A state highway extends from Middle Granville through Granville, Salem, and Cambridge to Troy, a branch running from East Greenwich to Greenwich.

Additional macadam roads are as follows: From Whitehall to Fort Edward; from Hudson Falls to Adamsville; from Smiths Basin to Hartford; from Argyle to South Argyle.

There are in Washington County 94 miles of completed improved highways, with 9 miles additional under construction.

AVAILABLE MARKETS

The principal local markets for produce of all kinds are the following manufacturing villages:

Hudson Falls and Salem are the county seats. A court house is located at each place, the offices of the county judge and surrogate being located at Salem.

At Hudson Falls and at Fort Edward are large paper mills.

Whitehall is a lake port, and the terminus of the Champlain Canal; it also has large silk mills.

Granville is one of the greatest centers for the production of roofing slate.

At Cambridge is located a large seed warehouse. Agricultural implements are manufactured at both Cambridge and Greenwich.

In addition to these towns, Glens Falls, just over the line in Warren County, is an excellent near-by market.

The transportation facilities make Troy, Albany, New York, Boston and the summer resorts on Lake George, also the mining towns of eastern Pennsylvania, easily accessible, all of which offer good markets. Boston receives a large part of the wool produced.

Dealers from Troy and Albany send trucks direct to the towns of Easton, Cambridge, Greenwich and White Creek, and a considerable amount of potatoes, milk and apples is marketed in this manner.

The milk establishments of Washington County receive 100,000,000 pounds of milk annually. Fully two-thirds of this amount is sold as market milk, the greater share going to the city of Boston and the remainder to New York City and the capital district or New England cities. There is manufactured in the county more than 100,000,000 pounds of American cheese and about 6,000,000 pounds of condensed milk.

The agricultural organizations are as follows:

Adirondack Beekeepers' Association.
Cambridge Valley Agricultural Society and Stock Breeders' Association.
Cambridge Valley Dairy Improvement Association.

Collar City National Farm Loan Association.
Granges: Pomona and 17 subordinate granges.
Hartford-Hebron Dairy Improvement Association.
Hebron Valley Dairy Association.
Mettowee Dairy Improvement Association.
Salem Beekeepers' Association.
Upper Hudson Poultry Association.
Washington and Rensselaer Sheep Breeders' and Wool Growers' Association.
Washington County Agricultural Society.
Washington County Dairymen's League.
Washington County Farm Bureau Association.
Washington County Giant Seed Potato Association.
Washington Holstein-Friesian Club.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are location at Argyle, Cambridge, Fort Ann, Fort Edward, Granville, Greenwich, Hartford, Hudson Falls, Middle Granville, Salem, West Hebron, and Whitehall.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms (acres)	446,456
Number of farms	3,564
Per cent of farm land improved	70.2

LIVE STOCK PRODUCTS

Milk sold	9,311,345 gal.
Cream sold	27,765 gal.
Butter fat sold	665,576 lbs.
Butter produced	254,194 lbs.
Cheese produced	12,711 lbs.
Eggs produced	1,031,020 doz.
Wool produced	26,444 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	10,070
Cattle	46,760
Sheep	36,752
Swine	12,859
Poultry	167,477

BEES

Number of colonies	2,890

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	18, 594	597, 342 bu.
Oats	25, 322	659, 913 bu.
Wheat	66	1, 262 bu.
Barley	94	1, 879 bu.
Buckwheat	2, 585	52, 264 bu.
Rye	4, 457	70, 016 bu.
Hay and forage	103, 086	121, 417 tons
Special Crops:		
Potatoes	10, 443	1, 375, 013 bu.
Vegetables, other than potatoes	1, 052	....
Dry edible beans	198	2, 486 bu.
Dry peas	13	255 bu.
Fruits:		
Apples	111, 069 trees	128, 006 bu.
Peaches and nectarines	185 trees	1 bu.
Pears	9, 382 trees	7, 662 bu.
Plums and prunes	7, 842 trees	2, 910 bu.
Cherries	7, 626 trees	1, 643 bu.
Quinces	58 trees	6 bu.
Grapes	2, 618 vines	63, 126 lbs.
Small fruits	75 acres	134, 382 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3, 376	3, 331

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	9, 372	9, 015
Cattle	47, 210	42, 927
Sheep	23, 793	21, 613
Swine	9, 232	6, 816
Poultry	180, 221	151, 277

BEES

	1917 Number	1918 Number
Number of colonies	3, 563	3, 475

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	14,774	13,554	288,033 bu.
Oats	24,854	21,278	642,918 bu.
Barley	260	414	6,708 bu.
Buckwheat	3,071	2,796	38,761 bu.
Wheat (winter)	276	259	4,832 bu.
Wheat (spring)	121	234	3,281 bu.
Rye	4,570	3,718	54,712 bu.
Hay and Forage:			
Alfalfa	663	795	1,842 tons
Other hay	84,676	88,969	106,794 tons
Corn (ensilage)	8,799	8,764	66,251 tons
Corn (fodder)	....	1,429	....
Special Crops:			
Field beans	1,068	1,838	9,670 bu.
Cabbage	63	272	1,775 tons
Potatoes	8,357	11,947	866,072 bu.
Roots raised for stock food	....	80	....
Canning factory crops	7	....	....
Other vegetables and garden crops	488	565	....
Fruits:			
Apples	3,320	3,791	100,849 bu.
Peaches	29	....	....
Pears	62	87	1,297 bu.
Plums	52	81	14,379 lbs.
Cherries	90	93	23,817 lbs.
Vineyard	15	20	14,897 lbs.
Small fruits	143	213	....

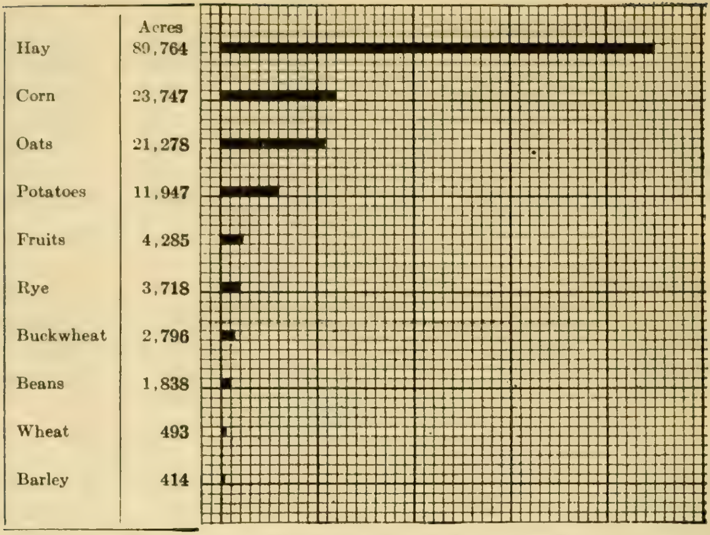
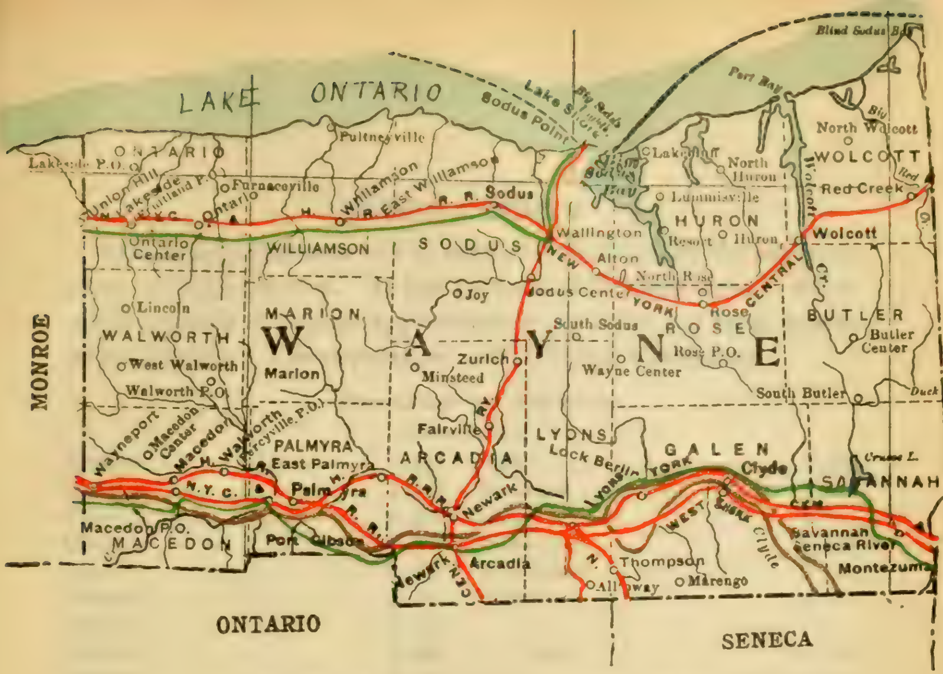
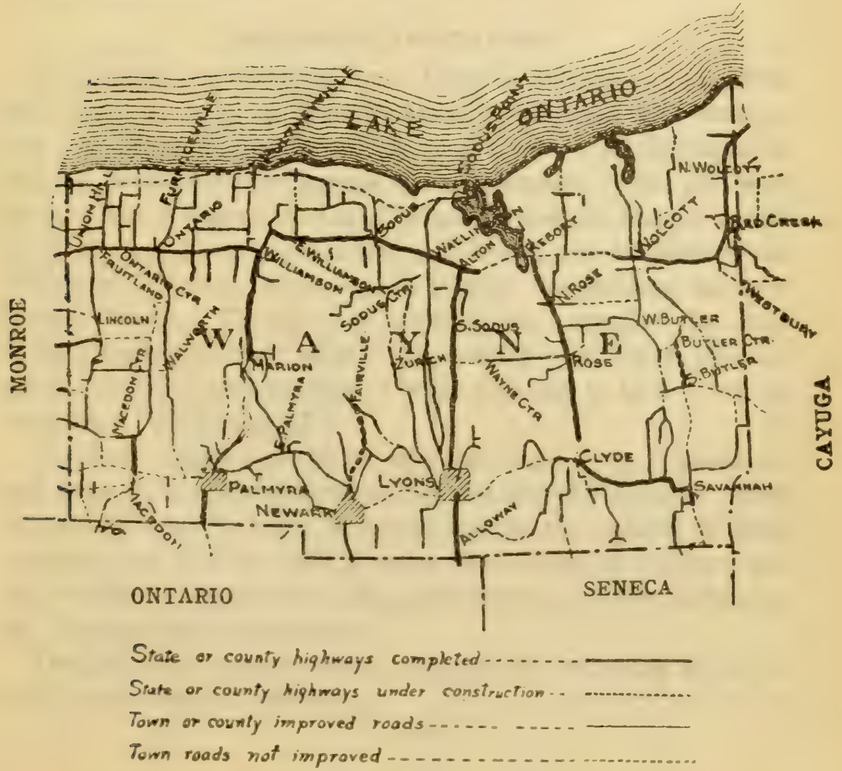


FIG. 165.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN WASHINGTON COUNTY


LAKE ONTARIO
Blind Sodus Bay
Port Bay
Lake Shore
Big Sodus
Sodus Point
Sodus Bay
Pultneyville
ONTARIO
Lakeside P.O.
Union Hill
Lakeside
Fruitland P.O.
Furnaceville
Ontario
Ontario Center
Williamson
East Williamson
Sodus
R. W. & O.
WILLIAMSON
SODUS
Wallington
Alton
Lake Bluff
North Huron
Lummisville
HURON
Resort
Huron
North Rose
North Wolcott
WOLCOTT
Red Creek
Wolcott
CAYUGA
MONROE
Lincoln
WALWORTH
West Walworth
Walworth P.O.
MARION
Marion
Joy
Sodus Center
NEW YORK CENTRAL
South Sodus
ROSE
Rose
Rose P.O.
Wayne Center
BUTLER
Butler Center
South Butler
WAYNE
Zurich
Minsteed
Fairville
ARCADIA
LYONS
Lock Berlin
GALEN
Clyde
SAVANNAH
Wayneport
Macedon Center
Macedon
Walworth
Percyville P.O.
PALMYRA
East Palmyra
Palmyra
N.Y.C.
West Shore
Newark
Lyons
Macedon P.O.
MACEDON
Port Gibson
Arcadia
Thompson
Marengo
Alloway
Savannah
Seneca River
Montezuma
Crusoe L.
ONTARIO
SENECA

Map of Wayne County, Showing Townships

Red, railroads; green, electric roads; brown, canals


LAKE ONTARIO
Furnaceville
Pultneyville
Sodus Point
Union Hill
Ontario
Fruitland
Ontario Ctr
Williamson
E. Williamson
Sodus
Wallington
Alton
Resort
Wolcott
N. Wolcott
Red Creek
Westbury
Lincoln
Walworth
Sodus Ctr
Fairville
N. Rose
S. Sodus
W. Butler
Butler Ctr.
S. Butler
WAYNE
Marion
Zurich
Rose
Wayne Ctr
Palmyra
Macedon Ctr
Clyde
Lyons
Savannah
Palmyra
Newark
Macedon
Alloway
MONROE
CAYUGA
ONTARIO
SENECA
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

WAYNE COUNTY

This county lies west of the center of the state on the southern shore of Lake Ontario. It has an area of 383,360 acres. From north to south it extends approximately 19 miles and from east to west 33 miles. The population is distributed as follows:

POPULATION BY TOWNSHIPS

(Census of 1915)

Arcadia	8,184	Rose	2,243
Butler	1,754	Savannah	1,639
Galen	4,643	Sodus	5,757
Huron	1,681	Walworth	2,308
Lyons*	6,195	Williamson	3,762
Macedon	2,483	Wolcott	3,261
Marion	2,435		
Ontario	2,934	Total	53,476
Palmyra	4,197		

---

*Lyons in the town of Lyons, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Ontario and Seneca in 1823, and named in honor of General Anthony Wayne. The territory now comprising Wayne County formed a portion of the transient hunting grounds of the Cayugas and the Senecas. That part west of the "New Pre-emption Line," which formed the eastern boundary of the present towns of Sodus and Lyons, was included in the Phelps and Gorham Purchase, and later in the purchase made by Robert Morris. Through the above towns extended the strip of land known as the "Gore," the ownership of which was disputed for some years because of what was said to be an error in surveying. (See page 57.)

The first pioneers of the county, who came from Connecticut and Long Island, settled near the present site of Palmyra. Near this village was the home of Joseph Smith, the founder of Mormonism; and Mormon Hill, between the villages of Palmyra and Manchester, is designated as the place where the plates containing the Mormon Bible were found.

The doctrine of spiritualism also had its beginning at Hydeville, in the town of Arcadia.

Settlement progressed but slowly for some time, owing to the diseases which prevailed in early years, and to fear of Indian hostilities and of British invasion during the War of 1812. On the return of peace, settlers began to arrive in considerable number, principally from New England and eastern New York. The completion of the Erie Canal gave a new impulse to immigration, and the building of the New York Central Railroad greatly increased the value of land.

DEVELOPMENT OF INDUSTRY

In the early years the attention of farmers was largely devoted to the growing of wheat, the grain that would sell most readily. Other grains were cultivated, but in a more limited way. Mixed farming later became more general, and dairy products and vegetables came to receive considerable attention.

Apples and pears have always been extensively produced in Wayne County. The first settlers in Sodus, Palmyra, and other points planted apple seeds almost as soon as they arrived, and the excellent quality of the fruit produced led to the extensive planting of orchards. Nurseries producing fruit tree cover a wide area. Ornamental trees are produced in the southern part. At the present time Sodus and Williamson lead in the production of apples and small fruits, which are grown principally in a belt extending four or five miles back from the lake. These towns have also a large acreage of truck garden products. The Sheldon pear had its origin in this county. In recent years raspberries have been extensively cultivated.

Another product that has given Wayne County a world-wide fame is peppermint. This herb was first produced at about 1820. At Lyons, some years later, Mr. H. G. Hotchkiss began to give his entire attention to the business of manufacturing and selling peppermint oil. Others took up the work, and at one time peppermint was one of the chief agricultural products of the county. It has now been entirely replaced by other lowland products.

Within the last quarter-century the fruit industry has brought into existence numerous evaporators or dry-houses, some of the largest of which are located at Williamson, Rose, Sodus, and Wolcott. Previous to the beginning of the recent war, Wayne County shipped quantities of dried apples to Germany. With the changed conditions then brought about there came a demand for fresh fruits, a large supply of which has been made possible by cold storage. Several large cold storage plants are now in operation — notably at Lyons, Williamson, Sodus, East Williamstown, North Rose, and Red Creek — which handle not only fruit, but also great quantities of vegetables. It is of interest to note that, according to the federal census of 1910, Wayne County leads in the production of raspberries and field corn. The 1918 census gives Wayne County second rank in the production of cherries.

CLIMATE AND RAINFALL

The most valuable meteorological records in Wayne County have been made at Lyons, at an elevation of 426 feet. The observer was Dr. M. A. Veeder.

Average dates for the last killing frost in spring and the first in fall are April 29 and October 16, respectively, giving a growing season of 170 days.

The following table, compiled from observations covering the period from 1889 to 1908, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT LYONS

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January......	25.8	70	1906	—18	1907	2.84	1.50	1892	17.3
February.....	24.4	66	1906	—13	1886	2.48	1.40	1908	17.2
March........	33.5	83	1905	0	1907	2.75	2.50	1900	12.4
April.........	46.0	88	1902	15	1904	24.6	1.20	1906	2.5
May..........	57.8	91	1903	26	1902	3.06	1.98	1907	......
June.........	67.2	94	1907	36	1906	4.08	2.80	1901	0.4
July..........	71.0	99	1902	43	1898	3.70	2.25	1893	......
August.......	69.3	96	1906	45	1904	3.49	3.50	1893	......
September....	63.5	96	1905	35	1905	2.62	2.43	1890	......
October.......	50.9	85	1900*	21	1905	3.10	2.80	1905	0.2
November....	39.9	70	1902*	9	1905	2.91	2.40	1900	5.9
December.....	29.7	65	1897	—8	1902	2.97	1.60	1907*	13.5
Year.........	48.2	99	1902	—18	1907	36.46	3.50	1893	69.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Wayne County is level or slightly rolling, and is generally admirably adapted to agriculture. It has a general slope northward toward Lake Ontario. A series of bluffs 25 to 75 feet high extends along the lake shore. From the summits of these bluffs the surface rises in gradual slopes to the lake ridge four or five miles distant. This ridge is 50 to 200 feet wide on the top, and is about 200 feet above the lake. It declines toward the east, and on the east border of the county it can scarcely be traced. From the foot of this ridge on the south the surface gradually slopes upward to the summit of the limestone ridge which extends east and west through the county a little north of the center, and forms the watershed between Lake Ontario and Clyde River. The summit of the latter ridge is 140 feet above the lake ridge and 340 feet above the lake; it is about three miles wide and is highest on the west border of the county. On the south this ridge gradually descends to Clyde River, when it slopes upward once more to the southern line of the county. South of the limestone ridge are numerous drift ridges extending north and south. The declivities are usually very steep, the summits rising 40 to 100 feet above the surrounding surface. They usually end abruptly toward the north, but decline gradually toward the south.

The principal streams are Clyde and Seneca rivers and Ganargua or Mud Creek and their tributaries, also a number of streams flowing into Lake Ontario. Within the county limits occurs the largest indentation along the southern shore of Lake Ontario, known as Sodus Bay, and forming an excellent harbor. The lake shore is generally bold, and varies from 10 feet in height at Salmon Creek to 100 feet at Sodus Point.

The soil of the county is generally derived from drift deposits and is composed of a sandy or gravelly loam with an intermixture of clay. Along the lake shore it is derived principally from the disintegration of the Medina sandstone, making a reddish sandy loam. In the valley of the Clyde River is a rich soil of gravelly loam and alluvium. There is considerable marshy land along the Clyde and Seneca rivers and north of the " ridge," which, when drained, is very productive.

Within recent years iron mines of considerable importance have been developed in the town of Ontario.

DESCRIPTION BY TOWNSHIPS

ARCADIA: The surface is a rolling region broken by drift ridges. Ganargua Creek, which flows east through the town, receives several small tributaries. The soil is a sandy and gravelly loam mixed with clay on the hills. Gypsum is found in the southwest and marl in the center.

At Newark is located the Custodial Asylum for Feeble-Minded Children.

Products: Muck crops, dairy products, general farm crops and apples.

Average values of farm land range from $95 to $130 an acre.

BUTLER: The surface is diversified — level in the east and rising into ridges in the northwest. Wolcott Creek is the principal stream. The soil in the valleys is a gravelly loam and on the hills it is generally clay. Considerable muck exists on the lowlands. Along Wolcott Creek is found quantities of limestone.

Products: Dairy products, cabbage, muck crops and tobacco.

Average values of farm land range from $80 to $110 an acre.

GALEN: The surface is hilly in the east, but more level in the west. In the southwest is a large tract of swamp land. Clyde River flows through the town. The soil of the highlands is a sandy and gravelly loam, while that of the lowlands is a black muck.

Products: Dairy products, beans, apples, cabbage and hay.

Average values of farm land range from $95 to $130 an acre.

HURON: The surface is rolling and declines toward the lake. In the western, northeastern and southeastern parts of the town are large tracts of lowlands originally of marsh formation which have been generally drained and put under cultivation. The lake shore rises in a series of bluffs. Several small streams flow north through the town. The soil is mainly a sandy and gravelly loam intermixed with clay in the south.

Products: Dairy products, beans and apples.

Average values of farm land range from $100 to $125 an acre.

LYONS: The surface is a moderately rolling region broken by sand ridges. Clyde River is the principal stream. The soil is a sandy and gravelly loam on the highlands with marl on the creek bottoms.

Products: Hay, cabbage, potatoes and dairy products.

Average values of farm land range from $100 to $125 an acre.

MACEDON: The surface, which is rolling and irregular, is drained by Ganargua Creek, which flows through the southeastern part. The soil north of the Erie Canal is principally a gravelly and clayey loam, while on the south it is largely a sandy formation.

Products: Potatoes, dairy products, cabbage and beans.

Average values of farm land range from $90 to $125 an acre.

MARION: The surface is broken by sandy hills and gravel ridges. The Niagara limestone crops out in the northern part. Red Creek is the principal stream. The soil is a gravelly calcareous loam and drift.

Products: Beans, muck crops, apples and dairy products.

Average values of farm land range from $100 to $140 an acre.

ONTARIO: The surface is mostly level, generally inclined toward the lake. Through the southern part of the town extends a ridge, on the north side of which the soil is a clayey loam, while on the south it is largely a gravelly loam and muck. It is drained by several streams running north to the lake, the principal of which are Bear, Dennison, Fish, and Derr creeks. The "ridge" extends through the southern part of the town.

Products: Apples, peaches, pears, raspberries, cabbage, canning factory crops and muck crops.

Average values of farm land range from $100 to $150 an acre.

PALMYRA: The surface is undulating, the hills and valleys trending generally north and south. Ganargua Creek, the principal stream, affords some good mill sites. Its tributaries are

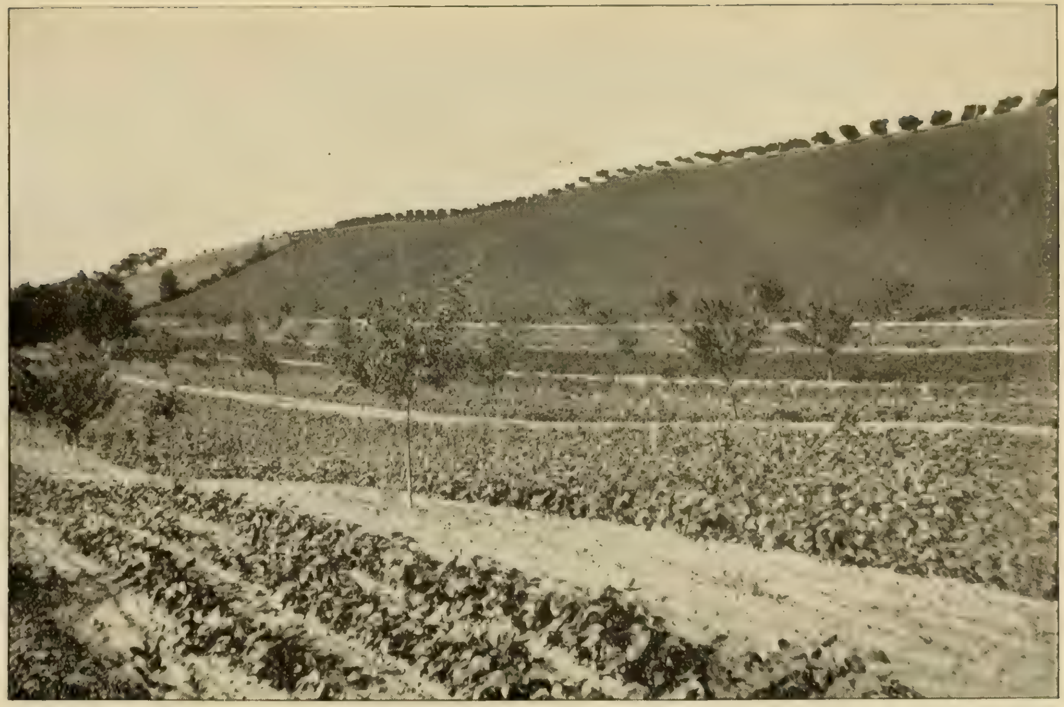


Fig. 166.—View on Hopkins Farm, Sodus, Wayne County, Showing Peaches on Hilltop, Alfalfa on Side of Hill, and Young Orchard on Flat with Filler Crops of Beans and Buckwheat

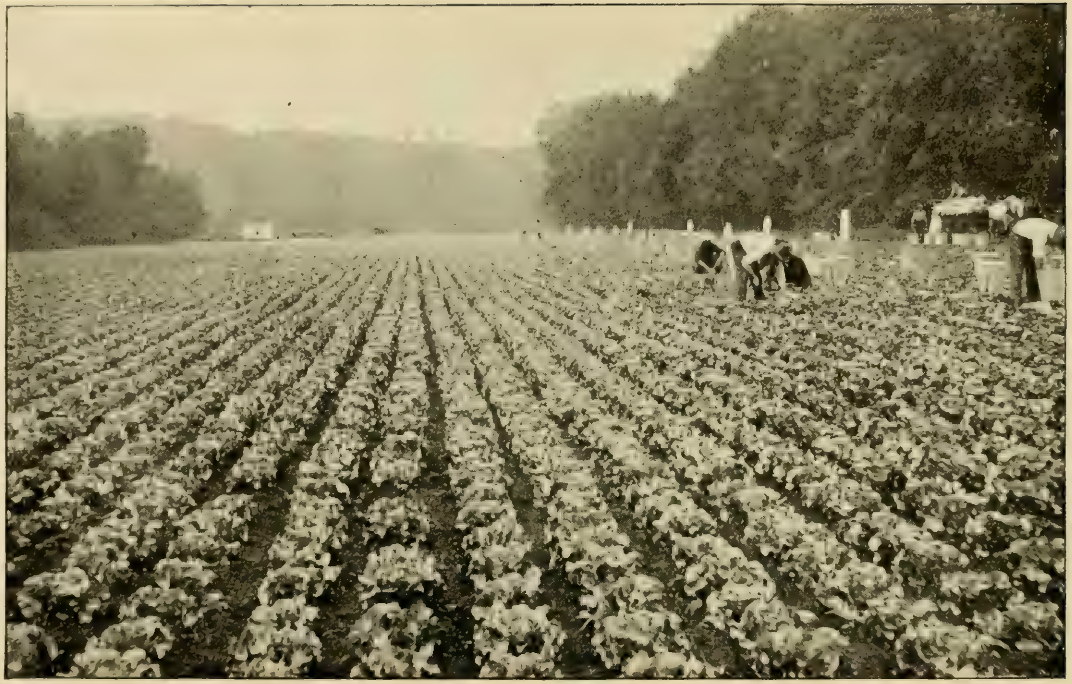


Fig. 167.—Harvesting Boston Head Lettuce Grown by Dr. B. E. St. John, Sodus, Wayne County

East and West Red creeks and several smaller streams. The soil is a calcareous loam with marl on the creek bottoms, and drift sand and gravel on the hills.

Products: Apples, dairy products, cabbage, potatoes and beans.

Average values of farm land range from $100 to $135 an acre.

ROSE: The surface is mostly undulating or level, with drift ridges in the southeast. The town is drained through Sodus Creek and other small streams. The soil is a gravelly loam occasionally mixed with clay; in the swamps the soil is a black muck. The clay is suitable for manufacturing brick and tile.

Products: Muck crops, apples, wool and general farm crops.

Average values of farm land range from $95 to $130 an acre.

SAVANNAH: The surface is broken by drift ridges in the north. In the south it is low and marshy, and in the southwestern part is an extensive swamp covering nearly 1,900 acres. The soil in the highlands is a sandy and gravelly loam; in the south it is principally muck and shell marl.

Products: Dairy products, apples, potatoes, cabbage and hay.

Average values of farm land range from $90 to $115 an acre.

SODUS: The surface in the northern part is mostly level, inclining gently toward the lake. The "ridge" bounds this level portion on the south. Farther south the surface is considerably broken by ridges running north and south. The lake shore varies from a low swamp to bluffs about 600 feet in height. The largest streams are Salmon and Fly creeks. In the northern part the soil is a clayey and sandy loam, and in the south it is a gravelly loam.

Products: Muck crops, apples, peaches, cherries, and raspberries.

Average values of farm land range from $100 to $200 an acre.

Walworth: The surface is a high rolling upland, the ridges being the most elevated land in the county. The Niagara limestone crops out in the northern part. The town is drained north by several small streams and southeast by tributaries of Red Creek. The soil is a rich sandy loam.

Products: Dairy products, muck crops, apples and cherries.

Average values of farm land range from $105 to $135 an acre.

Williamson: The surface is level in the north, rising to low ridges in the south. It is drained by small streams flowing into Lake Ontario. Mink and Salmon creeks are the two principal streams. The soil is a sandy, gravelly loam mixed with clay near the lake shore.

Products: Apples, peaches, pears, raspberries, cabbage, canning factory crops, and muck crops.

Average values of farm land range from $100 to $200 an acre.

Wolcott: The surface is undulating with a general inclination toward the lake. In several localities are tracts of low, marshy land. The streams are Wolcott and the Red creeks with several smaller streams flowing into Lake Ontario. The soil is a sandy and gravelly loam.

Products: Cabbage, dairy products, wool, and apples.

Average values of farm land range from $90 to $110 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Three lines of the New York Central cross Wayne County from east to west, one passing through the northern part and two through the southern part.

From Lyons a fourth line runs south to Geneva.

The Northern Central, which crosses the state from north to south, passes through the center of Wayne County and terminates at Lake Shore on Lake Ontario.

The Newark and Marion Railroad extends from Newark in the southern part northwest to Marion.

Electric Roads

An electric line of the New York State Railways runs from Sodus Point west through the northern part of the county to Rochester. The southern part is crossed by an electric road running between Syracuse and Rochester.

Waterways

The Barge Canal crosses the southern part of Wayne County from east to west.

Improved Highways

Through the northern part of the county extends an improved highway passing through Red Creek, Wolcott, Sodus, and Ontario. When this road is finally completed a concrete state highway will cross the entire county from east to west. Another road following the Barge Canal and the New York Central Railroad is being constructed across the southern part of the county. From Sodus Bay an improved highway extends south almost to Clyde and another extends from Clyde east to Savannah.

The central part of the county is crossed north and south by an improved highway passing through Lyons and reaching to Geneva. From Williamson a section extends south to Marion. A short section runs south from Palmyra and another connects Macedon and Macedon Center.

There are in the county 71 miles of completed improved highways, with 12 miles additional under construction.

AVAILABLE MARKETS

Wayne County fruit has a wide distribution, New York City undoubtedly receiving the greatest quantity. Philadelphia handles a very considerable amount, as does also Pittsburgh and other industrial cities in Pennsylvania. Apples are shipped extensively to Chicago, Cincinnati, and Cleveland. Small fruits and some apples are shipped to Watertown and Ogdensburg and other cities in the northern part of the state; also to Utica, Syracuse, and Binghamton. Lettuce goes mostly to Philadelphia, with some shipments to Baltimore, Pittsburgh, Cincinnati and Chicago.

Local kraut factories handle a large part of the cabbage produced.

A large part of the milk produced is shipped direct to Rochester. About 1½ million pounds of cream is collected, and there is manufactured 800,000 pounds of creamery butter, besides some American, Italian, and Greek cheese.

There are fifteen canning factories within the county.

The agricultural organizations are as follows:

Granges: Pomona and 20 subordinate granges.
Newark Fair Association.
Palmyra Union Agricultural Society.
Seneca National Farm Loan Association.
Wayne County Agricultural Society.
Wayne County Beekeepers' Society.
Wayne County Cooperative Hay and Produce Association.
Wayne County Dairymen's League.
Wayne County Farm Bureau Association.
Wayne County Pea Growers' Association.
Wayne County Sheep and Wool Growers' Association.
Wayne National Farm Loan Association.
Williamson Muck Growers' Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Clyde, Wolcott, Lyons, Macedon, Marion, Newark, North Rose, Ontario, Palmyra, Red Creek, Savannah, Sodus, Walworth, and Williamson.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S Census of 1910)

Land in farms (acres)	357,860
Number of farms	5,237
Per cent of farm land improved	83.9

LIVE STOCK PRODUCTS

Milk sold	3,217,654 gal.
Cream sold	55,219 gal.
Butter fat sold	1,223,897 lbs.
Butter produced	538,869 lbs.
Cheese produced	2,108 lbs.
Eggs produced	2,066,061 doz.
Wool produced	13,649 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	15,373
Cattle	32,867
Sheep	24,587
Swine	20,749
Poultry	343,400

BEES

	Number
Number of colonies	2, 433

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	25, 633	911, 653 bu.
Oats	34, 583	1, 010, 043 bu.
Wheat	16, 470	337, 333 bu.
Barley	3,243	70, 330 bu.
Buckwheat	3, 247	60, 524 bu.
Rye	2, 314	42, 062 bu.
Hay and forage	66, 438	104, 117 tons
Special Crops:		
Potatoes	9,280	1, 049, 202 bu.
Vegetables, other than potatoes	5, 622	....
Dry edible beans	4, 478	79,424 bu.
Dry peas	98	1,552 bu.
Fruits:		
Apples	812, 410 trees	3, 304, 197 bu.
Peaches and nectarines	166, 854 trees	130,554 bu.
Pears	102, 279 trees	78,034 bu.
Plums and prunes	21,976 trees	15, 711 bu.
Cherries	35, 385 trees	18,304 bu.
Quinces	14, 119 trees	11,244 bu.
Grapes	65, 076 vines	1, 083, 859 lbs.
Small fruits	2,011 acres	3, 558, 505 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	5, 377	4, 855

LIVE STOCK AND POULTRY

	1917	1918
Horses and mules	15, 379	13, 899
Cattle	28, 770	27, 095
Sheep	14, 493	11, 322
Swine	15, 518	13, 550
Poultry	358, 779	292, 425

BEES

	1917	1918
Number of colonies	1,975	2,493

SELECTED CROPS

	1917	1918	
	Acres	Acres	Yield
Cereals:			
Corn	17,590	17,395	298,784 bu.
Oats	28,447	28,401	948,900 bu.
Barley	2,860	3,827	76,659 bu.
Buckwheat	4,082	4,509	50,029 bu.
Wheat (winter)	23,922	23,732	488,513 bu.
Wheat (spring)	96	474	3,571 bu.
Rye	1,423	1,870	28,266 bu.
Hay and forage:			
Alfalfa	5,274	4,966	11,028 tons
Other hay	56,249	50,128	75,262 tons
Corn (ensilage)	6,103	6,501	36,586 tons
Corn (fodder)	....	2,711	....
Special crops:			
Field beans	12,449	12,615	86,105 bu.
Cabbage	2,027	3,398	18,166 tons
Potatoes	7,137	8,533	691,630 bu.
Roots raised for stock food	....	889	....
Canning factory crops	4,130	3,803	....
Other vegetables and garden crops	1,773	4,169	....
Fruits:			
Apples	34,935	38,987	352,904 bu.
Peaches	4,361	4,323	219,487 bu.
Pears	3,015	3,440	123,606 bu.
Plums	298	397	243,820 lbs.
Cherries	1,744	1,508	2,326,281 lbs.
Quinces	....	287	6,944 bu.
Vineyard	180	164	245,898 lbs.
Small fruits	1,830	1,443	....

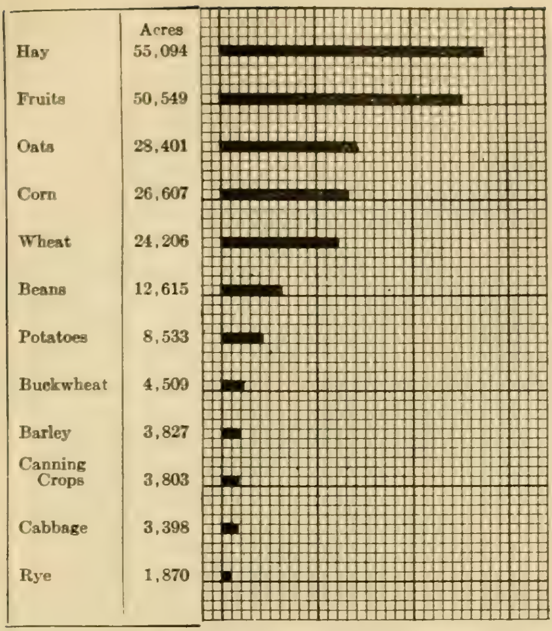


FIG. 168.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN WAYNE COUNTY

WESTCHESTER COUNTY

Westchester County lies in the southeastern part of the state, the Hudson River forming its western boundary and the state of Connecticut and Long Island Sound lying to the east. Its area is 286,720 acres; its length from north to south is approximately 30 miles and from east to west 22 miles in the widest part. The population is distributed as follows:

Population by Cities and Townships

(Census of 1915)

Mount Vernon (city)	37,583	North Castle	2,484
New Rochelle (city)	31,758	North Salem	1,181
White Plains (city)*	19,287	Ossining	12,181
Yonkers (city)	90,948	Pelham	3,782
Bedford	5,806	Poundridge	643
Cortlandt	22,790	Rye	24,136
Eastchester	7,558	Scarsdale	2,717
Greenburgh	26,129	Somers	1,173
Harrison	5,081	White Plains	16,618
Lewisboro	1,507	Yorktown	2,431
Mamaroneck	7,830		
Mount Pleasant	12,976	Total	321,713
Newcastle	4,401		

---

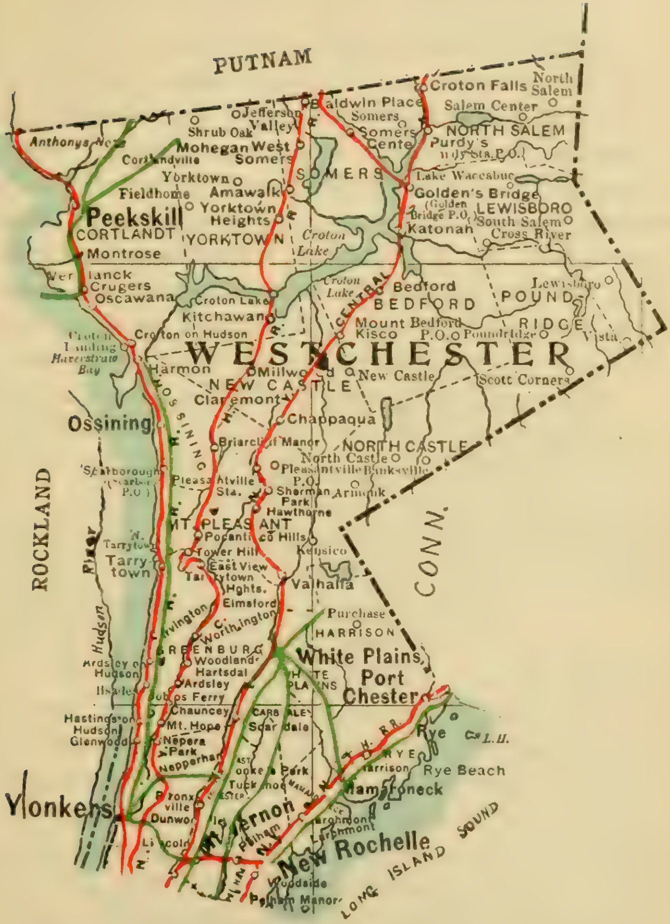
*The city of White Plains is the county seat.

Note: Population of cities at present is as follows: Mount Vernon, 42,700; New Rochelle, 36,000; White Plains, 21,000; Yonkers, 100,000.

HISTORICAL ASSOCIATIONS

This county, constituting one of the original divisions of the state under the English rule, was organized in 1683. Portions of the southern end of the county were annexed to New York County in 1873 and 1895. Its name recalls the old city of Chester, England. When first known to the whites this section was occupied by the Mohicans, known in early documents as "River" Indians.

It is a well-accepted fact that the first purchase of land from the Indians in New York was made by the Dutch West India Company in what is now Westchester County previous to 1639. When this company invited settlers to New Netherlands a number of Walloons (inhabitants of the northern Netherland provinces) took advantage of the offer and became the first tillers of the soil


PUTNAM
Croton Falls
North Salem
Baldwin Place
Salem Center
Jefferson Valley
Somers
Shrub Oak
Somers Center
NORTH SALEM
Purdy's
Anthonys Nose
Mohegan
West Somers
Cortlandville
SOMERS
Yorktown
Lake Waccabuc
Fieldhome
Amawalk
Golden's Bridge
Yorktown Heights
LEWISBORO
Peekskill
South Salem
Katonah
CORTLANDT
YORKTOWN
Croton Lake
Cross River
Montrose
Verplanck
Crugers
Oscawana
Croton Lake
Bedford
BEDFORD
POUND
Lewisboro
Kitchawan
RIDGE
Vista
Croton on Hudson
Mount Kisco
Bedford P.O.
Poundridge
Croton Landing
Haverstraw Bay
WESTCHESTER
Harmon
Millwood
New Castle
NEW CASTLE
Scott Corners
Claremont
CENTRAL
Ossining
Chappaqua
Briarcliff Manor
NORTH CASTLE
North Castle
Pleasantville
Banksville
Scarborough
Pleasantville Sta.
Sherman Park
Armonk
Hawthorne
MT. PLEASANT
Pocantico Hills
Kensico
ROCKLAND
N. Tarrytown
Tarrytown
Tower Hill
East View
Tarrytown Hghts.
Valhalla
CONN.
River
Hudson
Elmsford
Purchase
Irvington
Worthington
HARRISON
GREENBURG
Woodlands
White Plains
Ardsley on Hudson
Hartsdale
Ardsley
Port Chester
Dobbs Ferry
Chauncey
SCARSDALE
Scarsdale
Hastings on Hudson
Mt. Hope
Glenwood
Nepera Park
Nepperhan
Rye
RYE
Harrison
Rye Beach
Tuckahoe
Mamaroneck
Yonkers
Bronxville
Mt. Vernon
New Rochelle
Dunwoodie
Lincoln
Pelham
Larchmont
Woodside
Pelham Manor
LONG ISLAND SOUND
L.H.

MAP OF WESTCHESTER COUNTY, SHOWING TOWNSHIPS

Red, railroads; green, electric roads

on the shore of the Hudson. The company brought over horses, cattle, and poultry for the use of the settlers, whose farms, called "boweries," soon showed prosperity.

During Kieft's administration an Indian war drove the white settlers from Westchester County and threatened the complete destruction of the colony. As soon as the English were established in the eastern colonies, desiring to encourage settlement and enlarge their borders, they purchased from the Indians a tract of land that included a portion of the present Westchester County bordering the sound. A settlement of Huguenots was made in New Rochelle. Quakers settled the towns of Harrison, Westchester, and Mamaroneck, purchasing the lands of the Indians in 1695. Whether the celebrated Anne Hutchinson was the first of the immigrants from New England into Westchester County cannot be determined, but it is certain that she was one of the very earliest. She was killed during the great Indian raid.

During the Revolution this county was the scene of many important events, including the battle of White Plains in 1776. Being for the most of the time the middle ground between the opposing armies, it was continually exposed to alternate American and British raids and to depredation by bands of irresponsible ruffians not legally attached to either army.

During the greater part of July, 1776, White Plains was the seat of the Revolutionary government. It was there that the Declaration of Independence was formally proclaimed; that the name of the state of New York was substituted for the ancient designation of the province of New York; and that the original steps for the organization of the state machinery were taken. Kings Bridge was held by the British throughout the war, and Peekskill was the vital point which the Americans persistently maintained. Andre's arrest took place near the village of Tarrytown.

The recovery of Westchester County from the effects of the Revolution was an exceedingly slow process, notwithstanding the fact that after the war the state sold many acres of confiscated lands at low prices. Of those confiscated lands the principal tract was that of Philipseburgh Manor, which extended from the Spuyten Duyvil Creek to the Croton and from the Hudson to the Bronx.

The ancient residence of the lords of the manor, at Yonkers, is now the property of the state.

With the completion of railroads a great change at once transpired in local conditions. All towns through which these railroads passed at once began to make rapid growth, indicating the immigration of a large class of former New York residents. Among the first of those to take advantage of the privileges of rural life was Horace Greeley.

Westchester County claims the honor of having been the home of several other distinguished men, among them being Chief Justice John Jay; Gouverneur Morris, another of the great Revolutionary fathers; Daniel D. Tompkins, governor of New York and vice-president of the United States; also Washington Irving, who lived near the present village of Irvington. The famous Sleepy Hollow described in Irving's *Sketch Book* lies near Tarrytown. While making his home at Mamaroneck, James Fenimore Cooper wrote his first novel, *The Spy,* forming the basis of his literary reputation.

The principal event in the county during the decade 1820 to 1830 was the building of the state penitentiary at Sing Sing. The principal structures of the Croton water works forming the water supply of New York City are in this county and are among the largest and most substantial of their kind in the world.

DEVELOPMENT OF INDUSTRY

At the close of the eighteenth century the only commercial industry that had been established was that of conveying market produce to New York, in which a few sloops were engaged. As most of the farmers preferred to cart their own wares to the city, the three great thoroughfares were subjected to heavy traffic, especially when the river and sound were icebound. After the introduction of steamboats, however, the river traffic to and from New York City became very animated. Peekskill was the depot from which farmers, not only from Westchester County for miles around, but also from a large portion of Putnam County and even from Connecticut, shipped their produce to New York City. Apples and other fruit, butter, potatoes, cattle, sheep, calves, live pigs, and dressed pork were the principal articles of shipment and were received in such quantities as to give employment at one time, when this commerce was at its height, to six market sloops, while three passenger boats also shared in the business.

Several nurseries in the county produce ornamental trees.

CLIMATE AND RAINFALL

Westchester County climatological records are taken from the Bedford Hills station, which has an elevation of 425 feet. The present observer is Dr. B. Stivelman.

Average dates for the last killing frost in spring and the first in fall are May 1 and October 11, respectively, giving a growing season of 163 days.

The following table covers the period 1894 to 1918, with the exception of the average precipitation, the record of which began three years earlier:

RECORDS OF TEMPERATURE AND PRECIPITATION AT BEDFORD HILLS

	Temperature					Precipitation			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	28.0	65	1916	—17	1904*	3.76	2.52	1914	8.3
February	25.8	60	1903	—15	1908	3.78	3.98	1896	11.9
March	36.9	85	1910	.0	1916	3.72	2.35	1909	7.5
April	47.7	96	1915	13	1904	3.70	4.43	1901	4.6
May	59.2	94	1896*	26	1907	4.19	4.72	1897	......
June	62.2	99	1913*	32	1917	3.48	2.49	1899	......
July	72.7	102	1911*	42	1898	4.24	2.94	1899	......
August	70.6	98	1918*	41	1895	4.84	5.65	1901	......
September	63.6	96	1895	30	1904	3.07	3.09	1894	......
October	53.1	90	1908	16	1894	3.82	4.39	1913	T
November	41.3	76	1895	10	1904	3.50	3.29	1896	2.8
December	32.4	66	1914	—12	1896	3.84	2.23	1909	6.0
Year	49.5	102	1911*	—17	1904*	45.94	4.72	1897	41.1

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The shore rises abruptly from the river to elevations seldom less than 100 feet. While the rise is often quite steep, in no place does it resemble the palisade formation on the western shore. Beyond the ridges the land has a uniform, gentle descent into valleys which permit convenient and rapid travel in all directions.

Along the Spuyten Duyvil and Harlem River the land is generally low, sinking into marshy tracts in some localities near the sound. On the sound the Westchester coast is broken by numerous necks and points, with corresponding inlets and coves. Throughout the county are several ridges of hills parallel to the river and separated by wide valleys in which are numerous streams and lakes.

The principal streams emptying into the Hudson are the Croton River (the chief source of the old water supply of New York City), Peekskill Hollow Creek, and Pocantico and Sawmill rivers. To the latter stream is due the credit for the origin of a very considerable portion of the manufacturing industries of the county and consequently, to a great extent, the building up of the city of Yonkers.

The rocks of Westchester County consist mainly of gneiss and granite of many dissimilar varieties and white crystalline limestone. At Ossining occur marble deposits which have been extensively quarried. It was, in fact, largely for the purpose of employing convict labor for the quarrying of marble that this place was chosen for the site of the New York State prison. Peat swamps affording a fuel of good quality not yet brought into use exist in several parts of the county, notably in the town of Bedford. The soil of Westchester County is greatly varied and is generally of a light, sandy character. The methods of scientific farming that have been pursued from very early times have rendered it highly productive, although it is not remarkably fertile in its natural state. Drift deposits and alluvium occur along the sound and elsewhere, forming a rich soil.

DESCRIPTION BY TOWNSHIPS

BEDFORD: The surface is elevated and broken by small hills and valleys. It is almost entirely available for agricultural purposes. Croton River forms part of the northern boundary. The soil is generally a good quality of sandy and gravelly loam, but stony on the hills.

The State Reformatory for Women is located within this town.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $500 an acre.

CORTLANDT: The surface is broken and hilly, the ranges of hills generally extending north and south and separated by narrow valleys. The declivities are often steep and nearly precipitous. Anthony's Nose, on the north line, 1,200 feet above the river, is the highest land in the county. The surface is generally susceptible of cultivation. The principal streams are Croton River and Peekskill Hollow Creek. The soil is generally a sandy and gravelly loam with a strip of clay along the river.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $150 an acre.

EASTCHESTER: The surface is broken by ridges extending north and south, separated by narrow valleys. Bronx River, forming the northern boundary, and Hutchinson Creek, forming a portion of the eastern boundary, are the principal streams. The soil is a sandy and gravelly loam with some alluvium along the river intervales. Marble is quarried along the western border. A portion of this town has been annexed to the city of New York.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $1,500 to $3,000 an acre, chiefly for residential purposes.

GREENBURGH: The surface is much broken by hills parallel to the Hudson, and separated by the narrow valleys of Sawmill River and other streams. Hudson River forms the western boundary and Bronx River the eastern. Several marble quarries are worked near the Hudson. The soil is clay and sandy loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $500 to $1,000 an acre, chiefly for residential purposes.

HARRISON: The surface is generally level. Blind Creek forms a portion of the eastern boundary, and the Mamaroneck River forms a portion of the western. The soil is fertile gravelly loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $1,000 to $2,500 an acre, chiefly for residential purposes.

LEWISBORO: The surface is much broken, portions of it being mountainous. The Croton River forms its western boundary. A number of small lakes lie within the town. The soil is clayey and sandy loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $350 an acre.

MAMARONECK: The surface is broken by low ridges of gneiss generally extending north and south. Mamaroneck Creek, forming the eastern boundary, and its tributary Sheldrake Creek are the principal streams. The coast is deeply indented by several bays that divide into numerous peninsulas and headlands.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $1,000 to $2,500 an acre, chiefly for residential purposes.

MOUNT PLEASANT: The surface is broken by high ridges, the principal of which are Buttermilk and Chappaqua Hills. The Bronx River forms the eastern boundary. There are several marble quarries in town. The soil is a clayey and sandy loam well adapted to cultivation.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $500 to $1,000 an acre, chiefly for residential purposes.

NEWCASTLE: The surface much broken by hills, the principal of which are the Chappaqua Hills. A number of small streams rise in this town and on the borders are several lakes. The soil is gravelly clay and sandy loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $500 an acre.

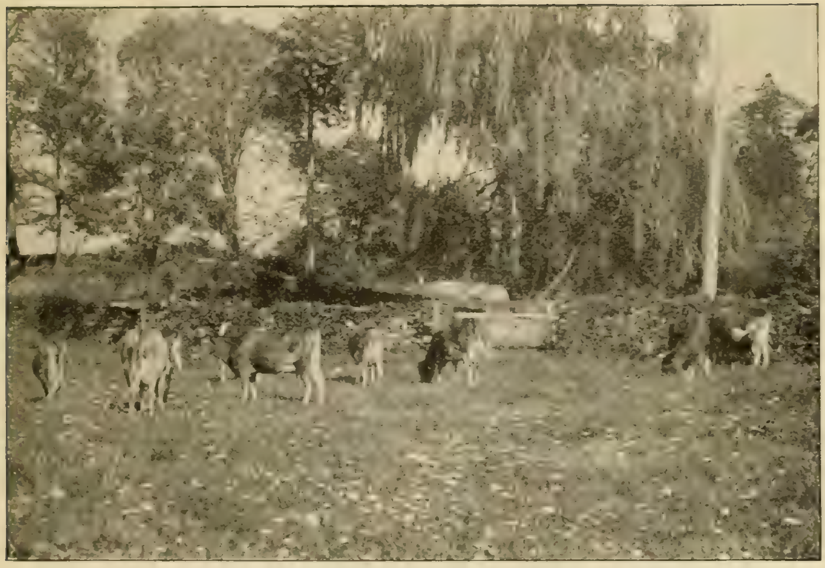


FIG. 169.—A HERD OF GUERNSEYS IN WESTCHESTER COUNTY

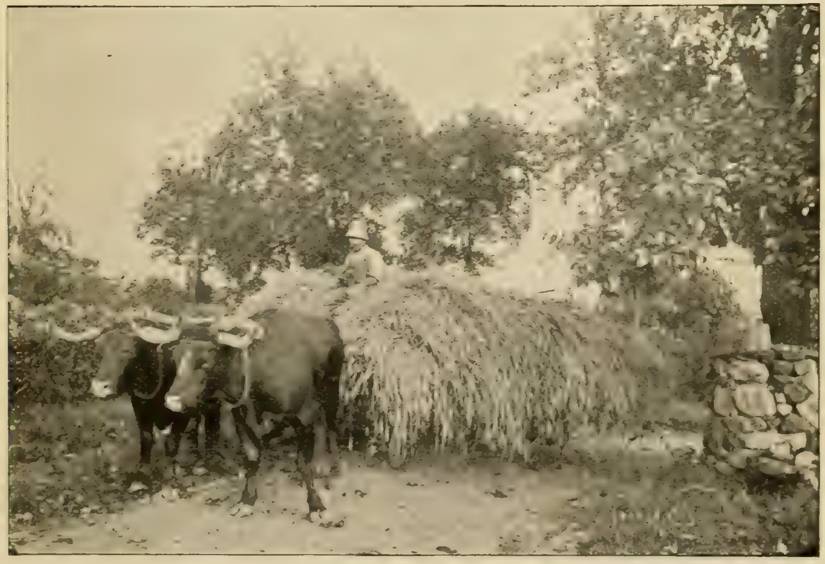


FIG. 170.— SCENE ON HESSIAN HILL FARM

NORTH CASTLE: The surface is much broken by hills, particularly the western part. It is drained by a number of streams. Several small ponds lie on the borders. The soil is clay and sandy loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $250 an acre.

NORTH SALEM: The surface is hilly, the summits rising 500 to 800 feet above tide. Croton River forms the western boundary. Titicus River, a branch of the Croton, flows through the center. The valley of this stream varies in witdth from ½ to 1½ miles, and is bordered by steep hills. Peach Pond on the north border covers 400 acres. The soil is well adapted to grazing.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $50 to $250 an acre.

OSSINING: The surface is mostly a hilly upland, the ridges extending parallel to the river. Pocantico River forms the eastern boundary. Marble is extensively quarried. The soil is a productive gravelly and clayey loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $600 an acre.

PELHAM: The surface is undulating, the valleys extending north and south. Hutchinson's Creek forms the western boundary. Several islands in Long Island Sound are included in this town. The soil is mostly an excellent quality of sandy and gravelly loam. A portion of this town has been annexed to the city of New York and it is not now an agricultural town.

Average values of land range from $1,000 to $3,000 an acre, chiefly for residential purposes.

POUNDRIDGE: The surface is hilly and much broken. Stony Hills occupy the northern part and extend three or four miles in a northeast direction. Mianus River forms a part of the southwestern boundary. The soil is gravelly loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of farm land range from $100 to $500 an acre.

RYE: The surface is broken and rocky. Byran River flows along the eastern boundary and Blind Creek along the western. Along the coast are several small islands. There are quarries of hard blue granite in the town. The soil is chiefly clay.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $1,000 to $2,500 an acre, chiefly for residential purposes.

SCARSDALE: The surface is broken by ridges and hills. Bronx River forms the western boundary. The soil is a clayey and sandy loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $1,000 to $2,500 an acre, chiefly for residential purposes.

SOMERS: The surface is broken by ridges in the south, while in other parts it spreads out into level plains. Croton River forms the southeastern boundary. A number of small streams flow through the town into Croton River. The soil is a sandy and gravelly loam.

Products: Corn, hay, fruit, potatoes, oats, rye, soy beans and garden crops.

Average values of farm land range from $100 to $150 an acre.

WHITE PLAINS: The surface is rolling and hilly. Mamaroneck River forms its eastern boundary and Bronx River its western. The soil is a clayey and gravelly loam.

Products: Hay, corn, potatoes, fruit, poultry and dairy products.

Average values of land range from $1,000 to $1,500 an acre, chiefly for residential purposes.

YORKTOWN: The surface is broken and hilly. The highlands lie along the northern border and several points are elevated 600 to 1,000 feet above tide. The principal stream is the Croton River, flowing across the southern part. There are in the town a number of small lakes, as well as the Mohansic Lake Reservation.

Products: General crops, fruit, potatoes, poultry, and dairy products.

Average values of farm land range from $100 to $250 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

Three lines of the New York Central extend through the entire length of Westchester County from north to south. The Hudson River division between New York and Albany lies near the river on the west. The other two lines center at Brewster in Putnam County, from which point the Harlem division extends south to New York and north along the eastern border of the state. This road makes connections at Brewster with the New York, New Haven and Hartford. From Goldens Bridge in the town of Somers a short line runs northwest to Lake Mahopac, thus making connections between the two New York Central lines passing through the center of Westchester County. New York City is reached by two additional railroads, each electrically operated, extending through the southern part of the county. Of these, one is a section of the New York, New Haven and Hartford and runs within a short distance of the Sound, extending into Connecticut.

Electric Roads

A network of electric roads covers the southern part of the county, four of which reach to White Plains, one continuing to Tarrytown. A short road runs between Ossining and Claremont. Two additional lines serve the northwestern part, the first extending from Peekskill to Putnam Valley, and the second from Verplanck on the river through Peekskill to Mohegan Lake.

Improved Highways

Westchester has an excellent system of roads, improved highways reaching nearly every section of the county. There are 248 miles of these roads completed, and 15 miles additional under construction.

AVAILABLE MARKETS

Westchester County is primarily a residential district. The four cities of the county, Mt. Vernon, New Rochelle, White Plains, and Yonkers, all have fine residences and various manufacturing interests. While Westchester County products are mostly consumed within the county, New York City, being easily accessible, forms an excellent market for commodities not required for home use.

The agricultural organizations are as follows:

Bedford Farmers' Club.
Dutchess County National Farm Loan Association.
Granges: Pomona and 2 subordinate granges.
Tarrytown Horticultural Society.
Westchester County Dairymen's League.
Westchester County Farm Bureau Association.
Westchester County Poultry Association.
White Plains Agricultural Fair and Westchester County Horse Show.

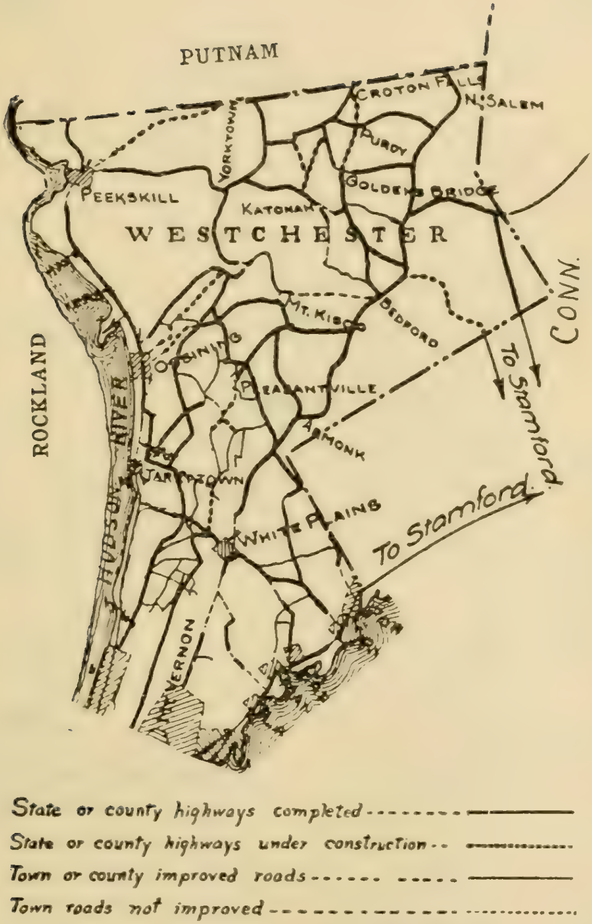
EDUCATIONAL FACILITIES

In Westchester County is the College of New Rochelle for women. There are also twenty-seven schools registered as having suitable facilities for maintaining approved courses in high school and academic work, located at the following places: Ardsley, Briarcliff, Bronxville, Buchanan, Croton-on-Hudson, Dobbs, Harrison, Hastings-on-Hudson, Irvington, Katonah, Mamaroneck, Mount Kisco, Mount Vernon, New Rochelle, North Tarrytown, Ossining, Peekskill, Pleasantville, Port Chester, Rye, Scarsdale, Tarrytown, Waverly, White Plains, Yonkers, and Yorktown Heights.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	145,837 acres
Number of farms	1,880
Per cent of farm land improved	62.2


PUTNAM
CROTON FALLS
N. SALEM
YORKTOWN
PURDY
PEEKSKILL
GOLDENS BRIDGE
KATONAH
WESTCHESTER
CONN.
BEDFORD
MT. KISCO
ROCKLAND
OSSINING
To Stamford
PLEASANTVILLE
HUDSON RIVER
ARMONK
TARRYTOWN
WHITE PLAINS
To Stamford
VERNON
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

LIVE STOCK PRODUCTS

Milk sold	4,560,220 gal.
Cream sold	8,327 gal.
Butter produced	221,407 lbs.
Cheese produced	3,442 lbs.
Eggs produced	760,780 doz.
Wool produced	659 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	5,392
Cattle	17,798
Sheep	1,140
Swine	5,430
Poultry	138,296

BEES

Number of colonies	1,090

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	4,049	188,181 bu.
Oats	1,443	34,520 bu.
Wheat	241	4,579 bu.
Barley	7	101 bu.
Buckwheat	204	3,823 bu.
Rye	1,093	18,912 bu.
Hay and forage	38,628	52,252 tons
Special crops:		
Potatoes	1,757	147,853 bu.
Vegetables, other than potatoes	1,715	....
Dry edible beans	1	14 bu.
Dry peas	1	11 bu.
Fruits:		
Apples	139,937 trees	253,870 bu.
Peaches and nectarines	16,172 trees	12,614 bu.
Pears	9,350 trees	10,620 bu.
Plums and prunes	2,194 trees	1,350 bu.
Cherries	2,384 trees	956 bu.
Quinces	1,178 trees	479 bu.
Grapes	5,511 vines	120,526 lbs.
Small fruits	95 acres	154,497 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,816	1,507

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	3,293	2,566
Cattle	11,949	11,249
Sheep	1,442	973
Swine	4,498	3,514
Poultry	146,806	102,741

BEES

	1917 Number	1918 Number
Number of colonies	1,064	959

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	2,487	3,281	90,897 bu.
Oats	2,113	1,605	36,708 bu.
Barley	43	33	549 bu.
Buckwheat	244	335	5,104 bu.
Wheat (winter)	415	273	2,824 bu.
Wheat (spring)	26	52	188 bu.
Rye	776	637	7,780 bu.
Hay and forage:			
Alfalfa	378	272	419 tons
Other hay	23,202	22,739	25,688 tons
Corn (ensilage)	2,231	2,662	17,838 tons
Corn (fodder)	....	1,110	....
Special Crops:			
Field beans	69	135	1,179 bu.
Cabbage	557	315	9,333 tons
Potatoes	1,539	2,411	132,882 bu.
Roots raised for stock food	....	203	....
Canning factory crops	108	72	....
Other vegetables and garden crops	1,034	1,200	....

Fruits:	1917	1918	
	Acres	Acres	Yield
Apples	4,792	5,216	143,935 bu.
Peaches	530	777	27,625 bu.
Pears	181	196	6,092 bu.
Plums	48	47	11,160 lbs.
Cherries	47	45	17,536 lbs.
Quinces	....	21	128 bu.
Vineyard	36	33	26,453 lbs.
Small fruits	715	573	....

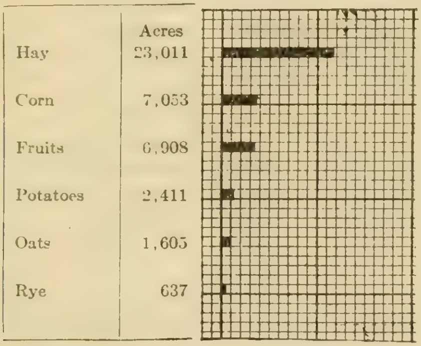


FIG. 171.—CHART SHOWING RELATIVE ACREAGE OF CROPS IN WESTCHESTER COUNTY

WYOMING COUNTY

Wyoming County lies in the western part of the state halfway between Lake Ontario and Pennsylvania. It has an area of 384,640 miles. The approximate length from north to south is 24 miles, and from east to west 26 miles.

The population is distributed as follows:

Population by Townships

(Census of 1915)

Arcade	2,479	Orangeville	905
Attica	2,911	Perry	5,841
Bennington	1,757	Pike	1,076
Castile	2,440	Sheldon	1,752
Covington	981	Warsaw*	4, 545
Eagle	1,189	Wethersfield	895
Gainesville	2,475		
Genesee Falls	661	Total	33,028
Java	1,636		
Middlebury	1,485		

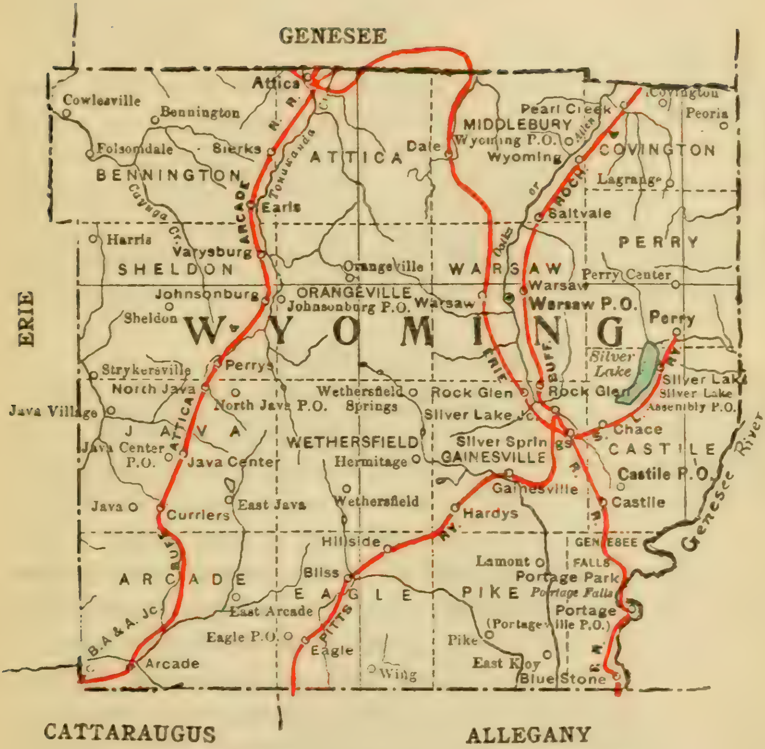
---

*Warsaw, in the town of Warsaw, is the county seat.

HISTORICAL ASSOCIATIONS

This county was formed from Genesee in 1841, and named from Wyoming in Pennsylvania. This is an Indian name signifying "on the large plain." The eastern tier of towns with the exception of a portion of Castile belong to certain tracts of the Morris reservation, and the remaining parts of the county to the Holland Land Purchase. The Gardeau tract, containing 17,927 acres, lying on both sides of the Genesee River, was reserved for Mary Jemison, or the "white woman," as she was commonly called. This celebrated woman, who was captured and adopted by the Indians, lived for about seventy years at Gardeau, a few miles below what is now Letchworth Park.

Previous to the Revolution the tide of immigration had started westward from the New England states. During that war it was checked, but soon after its close, settlement of the present Wyoming County had begun.


GENESEE
ERIE
LIVINGSTON
CATTARAUGUS
ALLEGANY
WYOMING
Attica
Cowlesville
Bennington
Folsomdale
Sierks
BENNINGTON
Cayuga Cr.
Tonawanda Cr.
ATTICA
Dale
Earls
ARCADE
Harris
Varysburg
SHELDON
Johnsonburg
Sheldon
ORANGEVILLE
Johnsonburg P.O.
Orangeville
Pearl Creek
MIDDLEBURY
Wyoming P.O.
Wyoming
Covington
Peoria
COVINGTON
Lagrange
Saltvale
PERRY
WARSAW
Warsaw
Warsaw P.O.
Perry Center
Perry
Silver Lake
Silver Lake
Silver Lake Assembly P.O.
Strykersville
Perrys
North Java
North Java P.O.
Java Village
JAVA
Java Center P.O.
Java Center
Java
Curriers
East Java
Wethersfield Springs
WETHERSFIELD
Hermitage
Wethersfield
Rock Glen
Rock Glen
Silver Lake Jc.
Silver Springs
GAINESVILLE
Gainesville
Chace
CASTILE
Castile P.O.
Castile
Hardys
Genesee River
GENESEE FALLS
Hillside
Bliss
ARCADE
EAGLE
PIKE
Lamont
Portage Park
Portage Falls
Portage
(Portageville P.O.)
East Arcade
Eagle P.O.
Eagle
Pike
East Koy
Blue Stone
Wing
Arcade
B.A.&A. Jc.
BUFF. ATTICA & ARCADE R. R.
PITTS
BUFF. & ROCH.
ERIE
Oatka Cr.
Allen Cr.
Genesee R.

MAP OF WYOMING COUNTY, SHOWING TOWNSHIPS

Red, railroads

Letchworth Park lies in the town of Genesee Falls. It is a tract of 1,000 acres, which became a state park in 1907 as a gift from Hon. Wm. P. Letchworth of Buffalo. Through the management of Mr. Letchworth, who planted about 10,000 trees for ornamental purposes, the park was developed into one of unusual beauty, enhanced by the three falls of the Upper Genesee. Undoubtedly few people realize that there is in this state a spot so picturesque outside of the Adirondack region.

To Mr. Letchworth we are indebted for the preservation of the home of Mary Jemison, together with about 5,000 exhibits of Indian relics. The original Indian Council House, to which is attached much of historic interest, was removed from its site at Caneadea, Allegany County, to the park, where it was reconstructed in its original form. Since the death of Mr. Letchworth the American Scenic and Historic Preservation Society has established within the park the first forest arboretum in the world.

DEVELOPMENT OF INDUSTRY

The earliest farmers in Wyoming County sold from their farms, wheat, corn, rye, hay, hemp and cattle, Albany and markets on the Susquehanna River receiving a large part of the produce.

The Erie Canal, which was then reached by way of the Genesee Valley Canal, was of great benefit to the early settlers, as it enabled them to obtain cash for their products at home. Previously the transportation of grain had been so costly as to render the crop unprofitable for marketing, and it had largely been disposed of in exchange for other goods.

Nurseries were started as soon as clearings were made, and at about 1850 the market demand for apples induced the planting of large orchards. Fruit raising has since become very prominent, especially in Castile, Perry, and Covington, where hundreds of carloads of choice apples are sold annually.

Wyoming County is engaged in general agriculture throughout, cereals and forage crops being accompanied by an active interest in dairying, and in the growing of sheep, beef cattle, swine, and poultry. In the production of field beans Wyoming County ranks second in the state. The eastern part of the county is devoted more extensively to the growing of cereal grains, and the western part to dairying, especially in and around Arcade. As an illustration of the extent of the dairy industry in this section, the Merrill-Soule Company of Arcade, Attica, and the Javas receives daily during the summer 150,000 pounds of milk, which, in addition to a large amount of condensed and skimmed milk, is made into milk powder. The Merrill-Soule powdered milk plant was the first of its kind in the United States.

In the western part of the county considerable maple sugar is produced.

The Worcester Salt Company has an extensive salt-producing establishment near Silver Lake.

CLIMATE AND RAINFALL

Climatological records for Wyoming County are taken from the Arcade station, at an elevation of 1,707 feet.

Average dates for the last killing frost in spring and the first in fall are May 24 and September 26, respectively, giving a growing season of 125 days.

The following table taken from records covering the period 1889–1907, shows both normal and extreme temperatures and precipitation:

RECORD OF TEMPERATURE AND PRECIPITATION AT ARCADE

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	20.6	65	1906	—38	1904	3.36	1.01	1904	23.3
February	20.5	62	1906	—22	1906	2.63	1.52	1892	15.5
March	29.3	79	1905	—15	1906	2.80	1.34	1900	11.8
April	42.0	84	1899	8	1898	2.63	1.40	1894	5.6
May	54.2	90	1904	20	1903	4.55	2.40	1894	0.3
June	62.7	90	1901*	30	1902*	4.55	2.57	1892	T
July	67.4	95	1897	35	1898	4.71	2.97	1897	......
August	65.1	92	1899	32	1906	3.81	3.55	1893	......
September	58.8	89	1906*	22	1905	3.68	1.68	1896	T
October	47.0	83	1905	19	1905	3.49	1.51	1892	2.4
November	35.9	69	1902	—12	1904	2.74	1.49	1890	8.3
December	24.7	57	1899*	—22	1906	2.97	1.51	1895	18.8
Year	44.0	95	1897	—38	1904	41.92	3.55	1893	86.0

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface is a broad rolling upland, divided into ridges and broken by ravines of the streams. It has a slight inclination toward the north. The highest ridges rise from 1,700 to 2,000 feet above tide. Several of the ravines in the north are 1,000 feet below the summits of the adjacent ridges. In the interior the ridges are broken, and the county assumes the hilly character which is more fully developed further south.

Genesee River, which forms a portion of the eastern boundary, is bordered by steep bluffs 200 to 400 feet high. Near Portageville the river descends from the plateau in a series of three falls to a depth of more than 30 feet within a distance of 2½ miles. The water has worn a deep, irregular ravine in the shelving rocks, and the nearly perpendicular banks at the foot of the lower falls are 380 feet high. The other principal streams are Cayuga, Tonawanda, Little Tonawanda, Oatka, Cattaraugus, and Buffalo creeks. The valley of Oatka Creek, from the southern part of Warsaw to the northern line of the county, is bordered by steep hills 400 to 1,000 feet high. Silver Lake, in Castile, is the principal body of water. The waters of this lake and of several of the streams deposit lime in the form of marl.

The drift deposits in the county are very extensive, and the soil in some parts is derived from disintegration. On the hills it is mostly a clayey loam underlaid by hardpan, and in the valleys it is a fertile, gravelly loam and alluvium. The lowlands contain quantities of marl and muck. As a whole, the county is very productive, and there is but little waste land.

DESCRIPTION BY TOWNSHIPS

Arcade: The surface is a rolling or hilly upland. Cattaraugus Creek flows southwest through the center of the town, and receives several tributaries, the principal of which is Clear Creek. From the valley of these streams the town spreads out into a rolling region with long, gradual slopes arable to their summits. The highest point is the ridge in the northeast, 1,100 feet above Lake Erie. In the uplands the soil is a clayey loam, and in the valleys a gravelly loam.

Products: Dairy products, oats, corn and forage crops.

Average values of farm land range from $40 to $100 an acre.

ATTICA: The surface is a rolling upland broken by the ravines of streams. In the east the hills have long, gradual slopes. Tonawanda Creek, which flows through the northwest corner, receives several branches from the east. The soil is a clayey and gravelly loam.

Products: Dairy products, beans, wheat and other cereals.

Average values of farm land range from $40 to $100 an acre.

BENNINGTON: The surface is a rolling upland broken by the ravines of small streams. Cayuga Creek and its branches flow through the center, Murder Creek through the north, and Tonawanda Creek through the southeast. The soil is clayey, gravelly, and sandy loam.

Products: Dairy products, forage crops and cereals.

Average values of farm land range from $40 to $100 an acre.

CASTILE: The surface is a rolling and terraced upland, broken by the deep valleys of the streams. The Genesee River, which forms a portion of the eastern boundary, is bordered by steep banks about 1,600 feet above sea level. Numerous small tributaries of the river have worn deep lateral channels in the bluffs bordering it in some places. A wide, level valley bordered by low terraces extends from the east shore of Silver Lake and opens into the valley of Wolf Creek at Castile village. Silver Lake is a noted summer resort and a popular place for the holding of conventions. The soil is a clayey and gravelly loam.

Products: Beans, wheat, oats, barley, sheep, dairy products and apples.

Average values of farm land range from $50 to $200 an acre.

COVINGTON: The surface is a moderately hilly upland, broken by the deep ravines of the streams. Oatka Creek, flowing through the northwest corner, receives the waters of Pearl Creek, which flows through the center. Wide, fertile, alluvial flats extend along Oatka Creek. The soil on the uplands is generally a gravelly loam.

Products: Beans, wheat, oats, barley, sheep, dairy products and apples.

Average values of farm land range from $50 to $200 an acre.

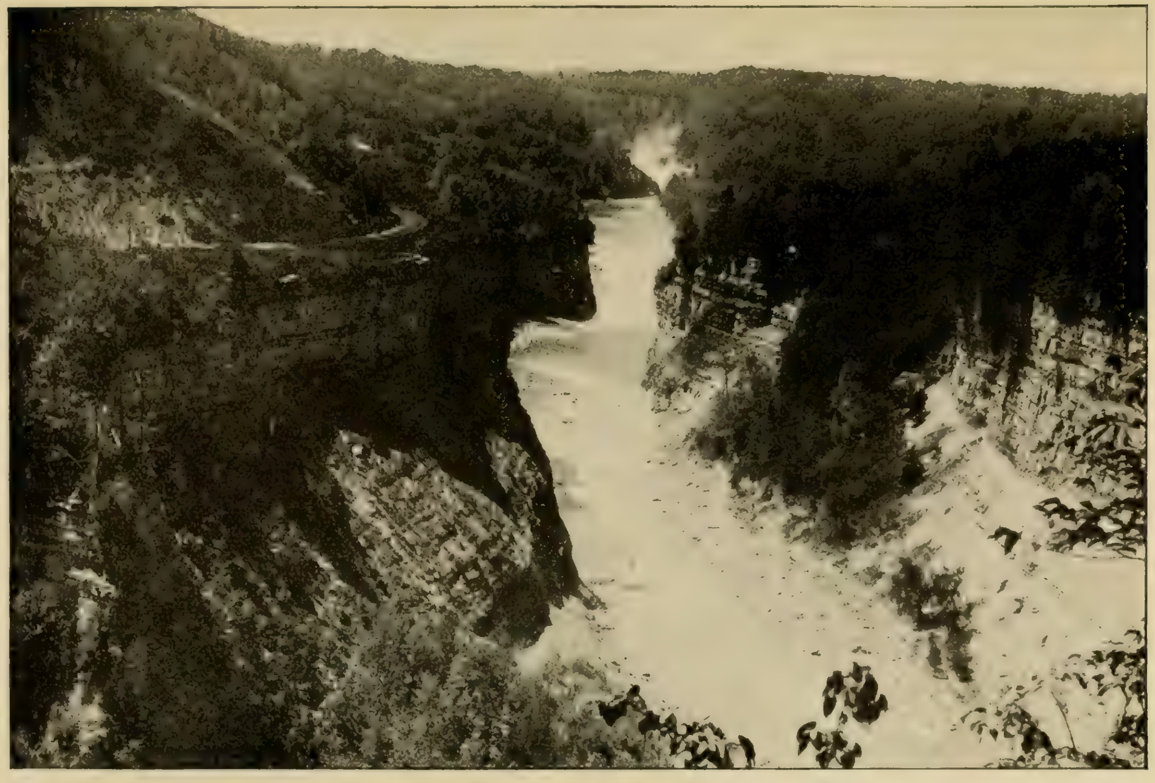


FIG. 172.— GORGE IN THE GENESEE RIVER NEAR PORTAGEVILLE

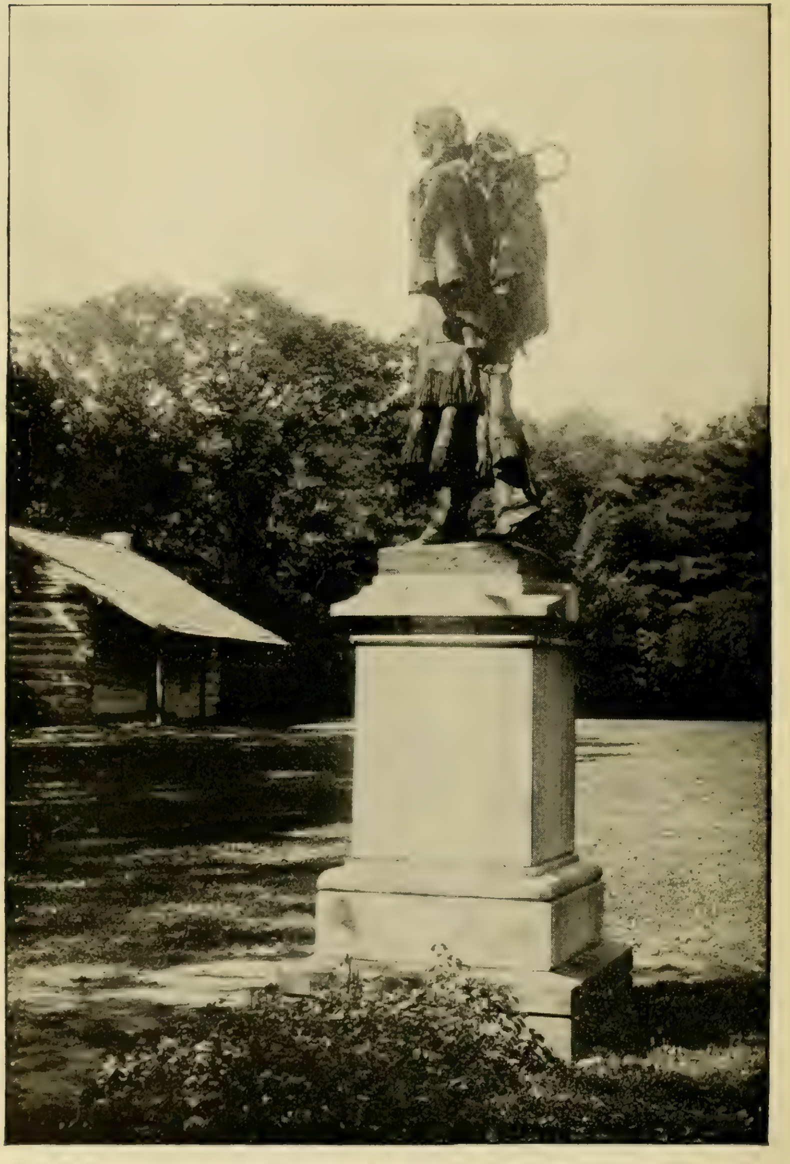


FIG. 173.— STATUE OF MARY JEMISON, LETCHWORTH PARK, WYOMING COUNTY

EAGLE: The surface is a hilly upland, broken by the deep ravines of streams. Wiscoy Creek and its branches form the principal streams. The hills bordering these streams are very steep, and their summits are 400 to 500 feet above the valleys. Eagle Lake, a small body of water in the southwest, has no visible outlet. The soil is a clayey and gravelly loam.

Products: Dairy products, cereals, beans and potatoes.

Average value of farm land ranges from $40 to $100 an acre.

GAINESVILLE: The surface is an upland, slightly undulating and broken by the valleys of Oatka Creek in the northeast, and East Koy Creek in the southwest. The soil on the hills is a thin dark loam underlaid by hardpan, and in the valleys a fertile, gravelly loam.

Products: Potatoes, beans and dairy products.

Average values of farm land range from $50 to $150 an acre.

GENESEE FALLS: A nearly perpendicular bluff about 1,600 feet high borders the Genesee River. From the summit of this bluff the country spreads out into an undulating upland. Within the limits of this town lies Letchworth Park and along its borders are the celebrated Portage Falls.

Products: Potatoes, oats, wheat and dairy products.

Average values of farm land range from $40 to $100 an acre.

JAVA: The surface is elevated, broken by hills and deep valleys. The highest summits rise from 400 to 600 feet above the valleys. Buffalo Creek flows through the western part, and receives a large number of tributaries. Cattaraugus Creek rises in the eastern part, one of the sources of which is Java Lake in the southeast. The soil on the hills is a thin dark loam underlaid by hardpan. In the valleys it is principally a gravelly loam.

Products: Dairy products, hay, potatoes, beans, cereals and maple sugar.

Average values of farm land range from $40 to $100 an acre.

MIDDLEBURY: The surface is a rolling upland broken by the deep valleys of the streams. Oatka Creek flows through the southeast, and Tonawanda through the west. A deep ravine extends east and west through the center of the town, forming a natural pass between the two valleys. The hills bordering Oatka Creek are steep, and rise from 400 to 600 feet. The soil is a gravelly and clayey loam.

Products: Wheat, oats, barley, potatoes, fruits and dairy products.

Average values of farm land range from $50 to $150 an acre.

ORANGEVILLE: The surface is a rolling upland, broken by deep ravines. The streams are Tonawanda Creek and its branches in the west, and small branches of Oatka and East Koy creeks in the east. The higher hills rise to about 2,000 feet above sea level. The soil is gravelly and clayey loam underlaid by hardpan.

Products: Dairy products and general farm crops.

Average values of farm land range from $40 to $100 an acre.

PERRY: The surface is level or gently rolling. The streams are small, and the foot of Silver Lake lies along the southern border. The soil is a clayey and gravelly loam.

Products: Beans, wheat, oats, barley, sheep, dairy products and fruit.

Average values of farm land range from $50 to $200 an acre.

PIKE: The surface is a hilly, broken upland. The principal streams are East Koy Creek in the east, Wiscoy Creek and Trout Brook in the center. The soil is a gravelly and clayey loam.

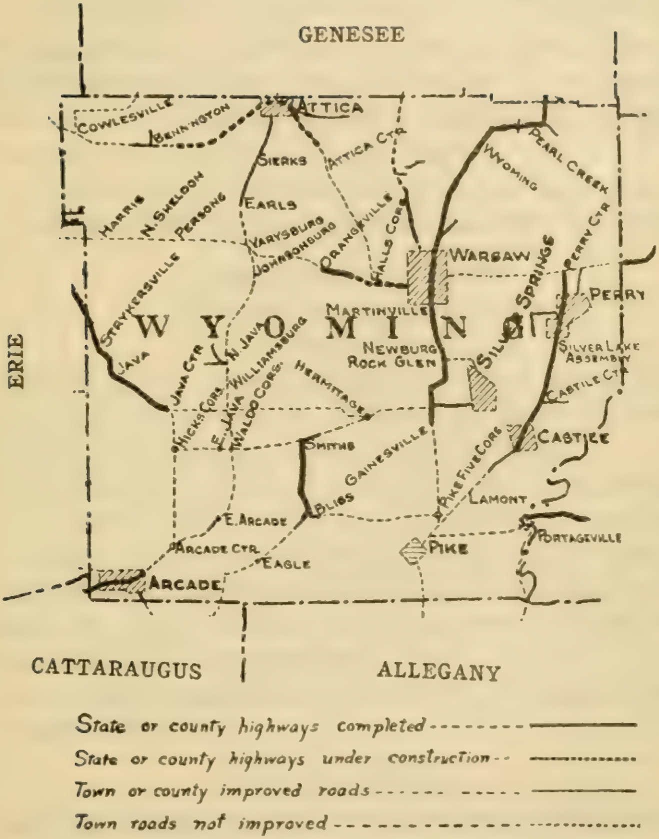
Products: Dairy products, potatoes, beans and cereals.

Average values of farm land range from $40 to $100 an acre.

SHELDON: The surface is a rolling upland 400 to 600 feet above the valleys. Tonawanda Creek flows through the east, and tributaries of Buffalo Creek through the west. On the hills the soil is a thin dark loam underlaid by hardpan; in the valleys it is a gravelly loam.

Products: Dairy products, hay and cereals.

Average values of farm land range from $40 to $100 an acre.


GENESEE
ERIE
LIVINGSTON
CATTARAUGUS
ALLEGANY
WYOMING
Cowlesville
Bennington
Attica
Sierks
Attica Ctr.
Earls
Harris
N. Sheldon
Persons
Varysburg
Johnsonburg
Orangeville
Halls Cor.
Warsaw
Wyoming
Pearl Creek
Perry Ctr.
Perry
Silver Springs
Strykersville
Java
Java Ctr.
N. Java
Williamsburg
Martinville
Newburg
Rock Glen
Silver Lake Assembly
Castile Ctr.
Hicks Cors.
E. Java
Waldo Cors.
Hermitage
Smiths
Gainesville
Castile
Pike Five Cors.
Lamont
Bliss
E. Arcade
Arcade Ctr.
Eagle
Pike
Portageville
Arcade
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

WARSAW: The surface is a broken upland, divided by the valley of Oatka Creek. The hillsides are steep, and the summits rise to about 1,500 feet above the valleys. The soil on the uplands is loam underlaid by hardpan, and in the valleys it is a fertile, gravelly loam. .

Products: Dairy products, cereals and fruit.

Average values of farm land range from $50 to $100 an acre.

WETHERSFIELD: The surface is a rolling upland. Tonawanda and East Koy creeks and Trout Brook rise in this town. The soil on the hills is a thin, dark loam underlaid by hardpan, and in the valleys it is a fertile gravelly loam.

Products: Dairy products, potatoes, beans and grains.

Average values of farm land range from $40 to $100 an acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

Railroads

The Erie railroad passes through the eastern part of Wyoming County connecting with the Arcade and Attica railroad, and with a branch of the New York Central at Attica.

The Arcade and Attica extends north and south through the entire western section of the county, making connections with the Erie at Attica, and with the Pennsylvania at Arcade.

The Buffalo, Rochester and Pittsburgh extends north and south through the central part of the county, with a branch running along Silver Lake and extending to Perry.

Lines of the Pennsylvania road enter the extreme southeast and southwest corners.

Improved Highways

Improved highways extend through various parts of the county, as follows: From Castile to Perry; from Gainesville north through Warsaw, Wyoming and Pearl Creek, making connection with an improved highway through Genesee County to Rochester; from Warsaw to Varysburg; from Bliss to Smiths Corners; from Java to Java Center; from Arcade village west to the county line, connecting with an improved highway to Buffalo and Olean, some of which is still under construction.

There are in the county 40 miles of completed improved highways, with 13 miles additional under construction.

AVAILABLE MARKETS

Wyoming County is largely devoted to dairying, and has the excellent market facilities provided by the Merrill-Soule Company with their powdered milk plants at Arcade, Attica, Warsaw, and Gainesville; also the Richardson-Beebe Company, located in the Javas; and the Borden Company, which owns several plants in the county.

Hay, potatoes, beans, wheat, and fruit are some of the products that are purchased by local men and shipped to the large cities. Through the location of the county and its ready accessibility to Buffalo and Rochester, these two cities afford ready market for all products.

The railroads make good connections for shipment of milk and other produce to New York, Philadelphia, Baltimore, Washington, and Pittsburgh.

Probably 40 per cent of the powdered skim milk manufactured in the state is made in Wyoming County. The milk establishments of the county handle large quantities of cream. Powdered whole milk and cream is manufactured, besides about 600,000 pounds of American cheese, some foreign type cheese, and quantities of Swiss cheese, the county ranking first in the production of the latter article.

There are two canning factories in the county.

The agricultural organizations are as follows:

Granges: Pomona and 16 subordinate granges.
Perry Farmers' Co-operative Association, Inc.
Silver Lake Agricultural and Mechanical Association Society.
Wyoming County Agricultural Society.
Wyoming County Dairymen's League.
Wyoming County Farm Bureau Association.
Wyoming National Farm Loan Association.

EDUCATIONAL FACILITIES

Approved courses in agriculture and home making are given at Castile, Perry, and Wyoming.

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Arcade, Attica, Castile, Gainesville, Wyoming, Perry, Pike, Varysburg, and Warsaw.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	373,444 acres
Number of farms	3,529
Per cent of farm land improved	71.1

LIVE STOCK PRODUCTS

Milk sold	10,614,475 gal.
Cream sold	115,099 gal.
Butter fat sold	541,200 lbs.
Butter produced	191,717 lbs.
Cheese produced	2,048 lbs.
Eggs produced	1,030,355 doz.
Wool produced	16,833 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	11,732
Cattle	45,217
Sheep	24,531
Swine	10,487
Poultry	158,211

BEES

Number of colonies	3,579

SELECTED CROPS

	Acres	Yield
Cereals:		
Corn	2, 752	109, 590 bu.
Oats	29, 925	915, 608 bu.
Wheat	10, 309	254,788 bu.
Barley	2,190	58, 860 bu.
Buckwheat	4, 906	108, 237 bu.
Rye	457	9, 169 bu.
Hay and forage	82, 514	142,315 tons
Special crops:		
Potatoes	9,879	1,493,071 bu.
Vegetables, other than potatoes	952	....
Dry edible beans	11,655	194,015 bu.
Dry peas	120	1,973 bu.
Fruits:		
Apples	270,801 trees	624,899 bu.
Peaches and nectarines	3,683 trees	1,232 bu.
Pears	25,420 trees	12,519 bu.
Plums and prunes	9,462 trees	3,849 bu.
Cherries	6,134 trees	1,631 bu.
Quinces	1,211 trees	179 bu.
Grapes	6,525 vines	57,197 lbs.
Small fruits	98 acres	121,538 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	3,432	3,208

LIVE STOCK AND POULTRY

Horses and mules	11,573	9,967
Cattle	44,489	33,830
Sheep	22,041	29,643
Swine	6,939	6,774
Poultry	163,391	133,374

BEES

Number of colonies	3,117	2,203

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Yield
Corn	1, 315	769	13, 476 bu.
Oats	21,640	22, 085	619. 648 bu.
Barley	2, 009	1,745	30, 496 bu.
Buckwheat	6, 500	4, 168	60, 076 bu.
Wheat (winter)	14. 330	14,953	307, 319 bu.
Wheat (spring)	63	308	4,253 bu.
Rye	906	1, 073	15, 456 bu.
Hay and forage:			
Alfalfa	2,136	1,808	4,165 tons
Other hay	70,345	63,362	86,060 tons
Corn (ensilage)	8,620	6,616	36,270 tons
Corn (fodder)	....	1,869	....
Special crops:			
Field beans	21,308	23,146	200,949 bu.
Cabbage	312	358	6,074 tons
Potatoes	6,065	5,949	649,610 bu.
Roots raised for stock food	....	178	....
Canning factory crops	121	112	....
Other vegetables and garden crops	502	505	....

	1917	1918	
Fruits:	Acres	Acres	Yield
Apples	6,831	6,676	95,721 bu.
Peaches	93	109	937 bu.
Pears	338	372	11,351 bu.
Plums	63	66	17,623 lbs.
Cherries	58	60	16,100 lbs.
Quinces	....	18	55 bu.
Vineyard	22	16	2,250 lbs.
Small fruits	162	190	....

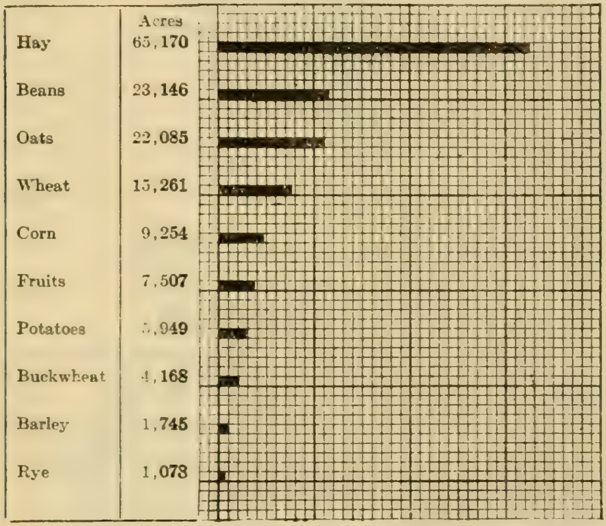


FIG. 174.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN WYOMING COUNTY

YATES COUNTY

This county lies in the west central part of the state on the western border of Seneca Lake. From east to west it extends approximately 23 miles, and 20 miles from north to south in the eastern part. It has an area of 219,520 acres. The population is distributed as follows:

Population by Townships

(Census of 1915)

Barrington	1,017	Potter	1,414
Benton*	2, 083	Starkey	2,656
Italy	823	Torrey	1,070
Jerusalem	2,424		
Middlesex	1,133	Total	18,841
Milo	6,221		

---

* Penn Yan, in the town of Benton, is the county seat.

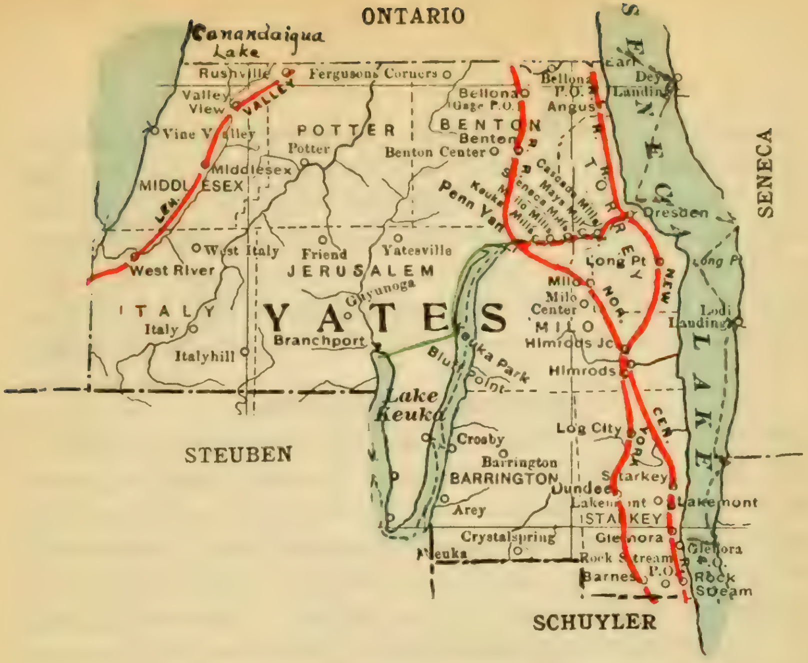
HISTORICAL ASSOCIATIONS

Yates County was formed from Ontario in 1823 and named from Joseph C. Yates, then governor of the state. Its county seat bears a name recording the fact that its early settlers were in part natives of Pennsylvania and of New England — hence Pennsylvania-Yankee, shortened to Penn Yan.

The original inhabitants, the Seneca Indians, are said to have assembled annually for offering up their sacrifices on the top of Bare Hill, which rises to a height of about 1,000 feet, in the town of Middlesex.

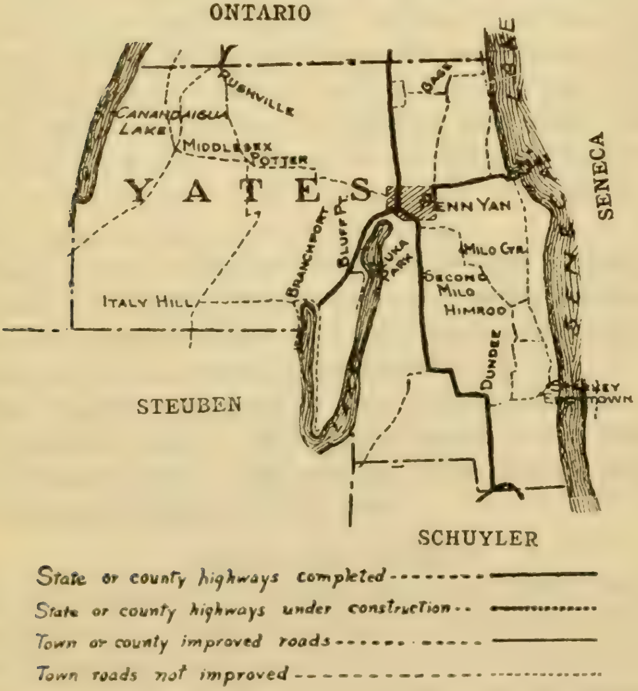
All of this section of the county was obtained in 1788 by Phelps and Gorham, who acquired their title from the Indians. The disputed strip of territory between the old and new preemption line, and known as the "gore," ran through the eastern part of Yates County.

In the town of Torrey settlement was made in 1788 by a company of "Friends." Two years later their leader, Jemima Wilkinson (or the "Universal Friend," as she styled herself), left her home in Pennsylvania and came among them. A few years


ONTARIO
Canandaigua Lake
Rushville
Fergusons Corners
Valley View
Vine Valley
POTTER
Potter
Middlesex
MIDDLESEX
Bellona
Gage P.O.
Bellona P.O.
Angus
Earl
Dey Landing
BENTON
Benton
Benton Center
Penn Yan
Dresden
Long Pt
West Italy
Friend
Yatesville
West River
JERUSALEM
ITALY
Italy
Italyhill
YATES
Branchport
Keuka Park
Bluff Point
Lake Keuka
Milo
Milo Center
MILO
Himrods Jc
Himrods
Lodi Landing
Long Pt
SENECA
SENECA LAKE
STEUBEN
Crosby
Barrington
BARRINGTON
Log City
Starkey
Dundee
Arey
Lakemont
STARKEY
Crystalspring
Keuka
Glenora
Glenora P.O.
Rock Stream
Rock Stream P.O.
Barnes
SCHUYLER

Map of Yates County, Showing Townships

Red, railroads; green, electric roads


ONTARIO
Canandaigua Lake
Rushville
Middlesex
Potter
YATES
Penn Yan
Branchport
Bluff Pt.
Keuka Park
Milo Ctr.
Second Milo
Himrod
Italy Hill
Dundee
Starkey Eddytown
SENECA
Seneca Lake
STEUBEN
SCHUYLER
State or county highways completed
State or county highways under construction
Town or county improved roads
Town roads not improved

Map Showing Improved Highways

later she established herself permanently in the town of Jerusalem, going out occasionally to speak to her followers in the surrounding section. After her death the society passed out of existence. A notable fact in connection with these people is that the first grist mill in this part of the state was erected by them at City Hill, and for some time it supplied the whole region of what was then eastern Ontario County with flour, except such as was brought from the east.

DEVELOPMENT OF INDUSTRY

After the enactment of a law relating to wool, in 1828, the raising of sheep became a great source of wealth. From that time until the completion of the railroad from Watkins to Canandaigua, thus furnishing transportation for fruit and other perishable articles, wheat and wool, with some barley, were the principal products. Agriculture then became more diversified, and more fruit and cereals, especially barley, were raised.

The grape industry was originated in this locality at about 1836, although but few grapes were planted previous to 1865, and then only in small vineyards. At about that time plantings increased rapidly, and during the next five years became a leading industry in many localities. At the present time vineyards entirely surround Lake Keuka, reaching back from the water from ½ to 1½ miles, the acreage being roughly estimated at from 10,000 to 12,000 acres. According to the 1918 census, Yates County ranks second in grape production.

Sheep raising is the main live-stock interest at the present time, and the breeding of pure-bred swine occupies considerable attention. Poultry is kept on nearly every farm, the average number to the farm being approximately fifty-five.

Other important products of Yates County are corn, wheat, hay, beans, and apples. The canning industry is very important.

The largest plant in this country manufacturing grape and fruit baskets is located at Penn Yan.

CLIMATE AND RAINFALL

The climatological records here given for Yates County were taken at Penn Yan and Keuka Park at an elevation of 750 feet. Keuka Park being only four miles distant from Penn Yan, the records have been treated as coming from a single station.

The observer at Penn Yan was Ralph E. Eastman, and at Keuka Park, Dean L. Myers.

Average dates for the last killing frost in spring and the first in fall are May 5 and October 16, respectively, giving a growing season of 164 days.

The following table, compiled from observations covering the periods 1829–1904 and 1907–09, shows both normal and extreme temperatures and precipitation.

RECORD OF TEMPERATURE AND PRECIPITATION AT PENN YAN AND KEUKA PARK

	TEMPERATURE					PRECIPITATION			
	Average	Highest maximum		Lowest minimum		Average inches	Amount in 24 hours		Snow, average depth in inches
		Degrees	Year	Degrees	Year		Greatest record, inches	Year	
January	24.2	64	1909	—15	1904	1.67	0.95	1902	9.5
February	24.1	60	1903	—17	1908	1.61	1.34	1900	9.2
March	33.4	75	1903	—10	1900	1.91	2.84	1900	8.8
April	44.7	88	1899	14	1909	2.30	1.78	1901	4.2
May	56.2	92	1899*	25	1903	2.86	1.35	1909	0.4
June	65.6	96	1900*	37	1907	3.34	1.65	1903	......
July	71.8	99	1899*	38	1898	3.33	2.76	1903	......
August	68.3	99	1899*	41	1907*	2.91	2.36	1901	......
September	63.1	96	1900	35	1899*	2.49	1.54	1898	.....
October	50.9	92	1900	23	1907	2.60	1.73	1898	T
November	39.5	75	1909	13	1903	2.13	2.49	1900	2.5
December	28.2	63	1897	—2	1899	1.81	1.16	1901	11.8
Year	47.5	99	1899*	—17	1908	28.96	2.84	1900	46.4

* Also earlier years.

TOPOGRAPHY AND NATURAL CHARACTERISTICS

The surface of Yates County consists of a series of ranges extending from Steuben County in a northerly direction and gradually declining from a height of about 1,700 feet above tide on the southern border to a level of the undulating region near the foot of Seneca Lake. The uplands, except in the extreme western part, are smooth and arable to their summits. The valleys between them are wide and exceedingly fertile, and the northern part of the county is a fine rolling region.

The principal streams in the county are Keuka Lake Outlet, Kashong Creek, Big Stream, Rock Stream, Flint Creek, and West River. Seneca Lake, forming the eastern boundary of the county, is 447 feet above tide and Canandaigua, forming a part of the western boundary, is 668 feet. Keuka Lake, near the center, two-thirds of it lying within the county, is 718 feet above tide and 18 miles in length. Its northern part is divided by Bluff Point into two branches, each of which is from 1 to 2 miles wide.

The soil consists largely of a fine quality of gravelly loam intermixed with silt and disintegrated shales. It is well adapted either to tillage or to pasturage.

Lime is the most valuable mineral of the county. The Portage group near Penn Yan furnishes a good quality of flagging stone and is extensively quarried for that purpose.

DESCRIPTION BY TOWNSHIPS

Barrington: The surface consists principally of a high ridge sloping gradually upward from Keuka Lake to a height of 600 to 800 feet above the lake. The ascent is nearly uniform for about two miles and the summit of the ridge is rolling. Big Stream flows through the southeastern corner. The soil is largely a silt loam, generally productive.

Products: Wheat, oats, hay, beans, grapes, sheep, beef cattle.

Average values of farm land range from $25 to $75 per acre.

Benton: The surface is rolling, descending gradually toward the north and east. The valley of Keuka Lake extends about one mile into the southern part of the town. Kashong Creek flows through the northwestern corner. The soil is generally a sandy or silty loam.

Products: Oats, wheat, barley, beans, cabbage, potatoes, apples, cherries and dairy products.

Average values of farm land range from $100 to $200 per acre.

Italy: The surface consists of three ridges each about 1,500 feet above Canandaigua Lake and separated by the valley of Flint Creek and West River hollow. These valleys are generally narrow and bordered by steep slopes. The summits of the ridges are broken uplands. The soil is a slaty and gravelly loam, best adapted to pasturage.

Products: Rye, oats, hay, beans, sheep, beef cattle and grapes.

Average values of farm land range from $20 to $40 per acre.

Jerusalem: The surface is divided into two ridges by the west branch of Keuka Lake and its inlet. The east ridge is about 600 feet high, 1½ to 2 miles wide and is bordered by steep declivities. The ridge on the west rises gradually for three or four miles, and attains a height of about 1,200 feet above the lake, where the surface spreads out into a rolling upland. The soil is a gravelly and slaty loam, well adapted to both pasturage and tillage.

Products: Wheat, oats, hay, beans, grapes, sheep and beef cattle.

Average values of farm land range from $25 to $100 per acre.

Middlesex: The surface consists principally of high ridges separated by narrow valleys. The summits are 500 to 1,200 feet above the lake. West River is the principal stream. The soil is generally a sandy or gravelly loam.

Products: Wheat, grapes, apples, beans, cabbage, sheep and wool.

Average values of farm land range from $25 to $150 per acre.

Milo: The surface rises from Keuka Lake in a gradual slope for two miles, attaining an elevation of about 400 to 600 feet. From this summit the land spreads out into an undulating region which gradually declines on the west to the valley of Keuka Lake. The soil is principally a gravelly loam, with silty clay in the southeast and near Keuka Lake.

Products: Oats, wheat, barley, beans, grapes, apples, dairy and beef cattle and sheep.

Average values of farm land range from $75 to $200 per acre.

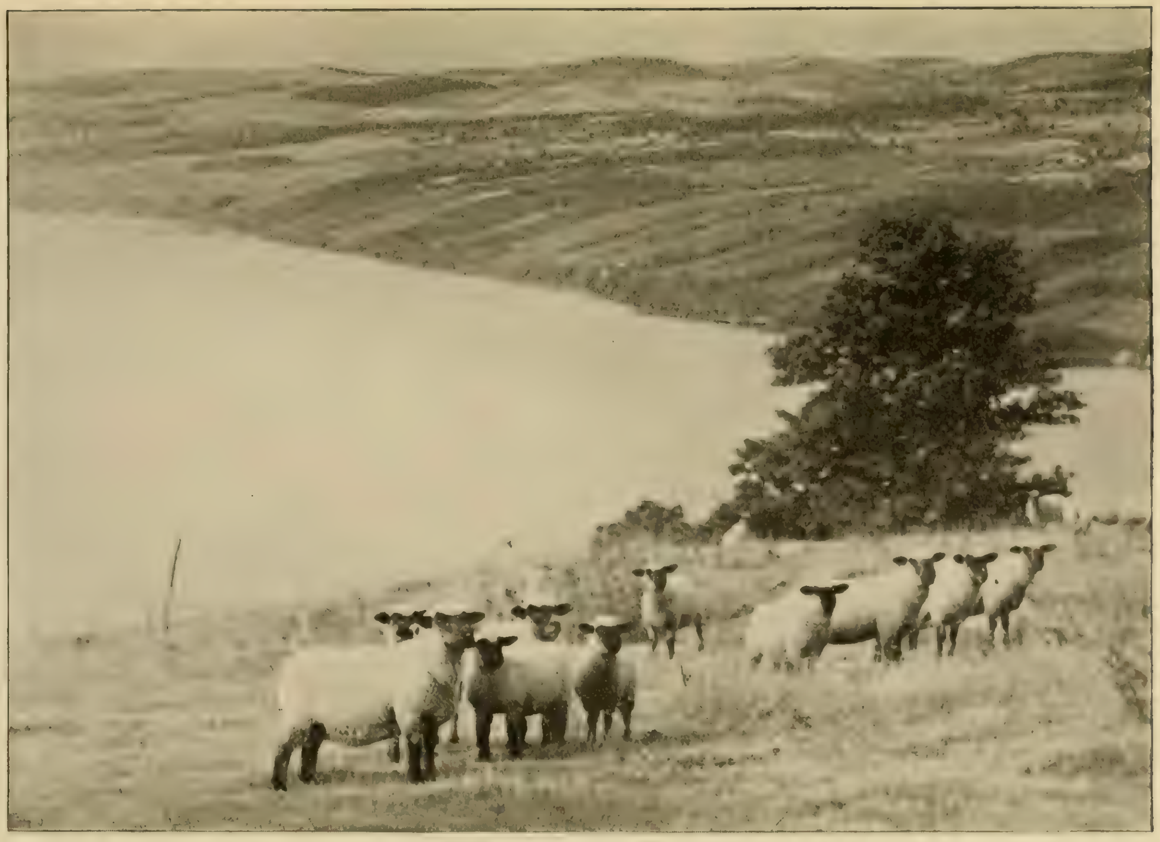


FIG. 175.—VIEW ON LAKE KEUKA, SHOWING VINEYARDS ON HILLSIDES ACROSS LAKE

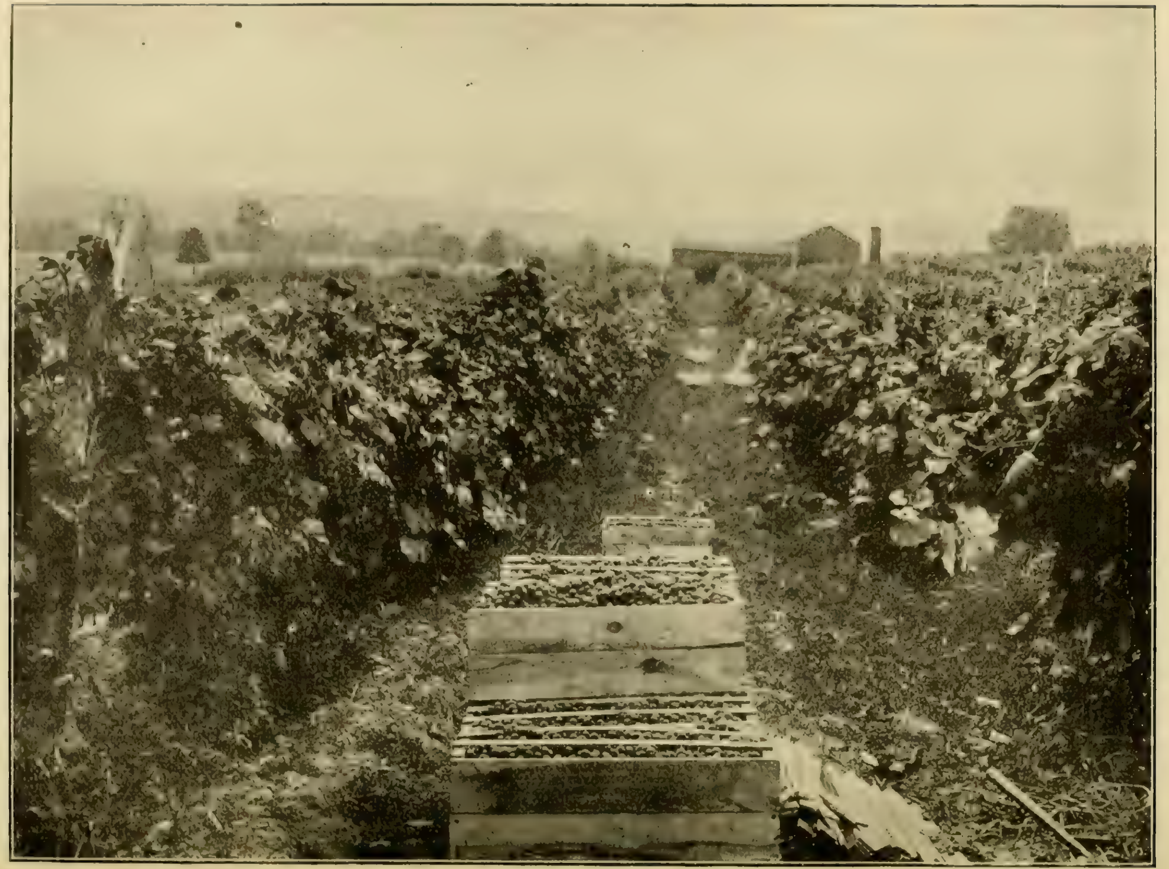


Fig. 176.— Portion of Vineyard Owned by Hon. Calvin J. Huson, Dresden

POTTER: The surface is hilly in the southwest and rolling in the center and north. Flint Creek flows northerly through the central part of the town. For several miles along its course there is a swamp 1 to 1½ miles in width. The soil in the southwest is a slaty loam; in other sections it is a gravelly and sandy loam with an intermixture of clay. An area of muck extends through the center of the town.

Products: Wheat, oats, hay, beans, sheep and wool.

Average values of farm land range from $25 to $100 per acre.

STARKEY: The surface is a gradual slope from the bluffs bordering on Seneca Lake to the west border of the town where it attains an elevation of about 500 feet. In the southern half of the town the bluffs along the lake are 100 to 200 feet high and nearly perpendicular. A ridge breaks the uniformity of the slope in the south central part of the town. Big Stream and Rock Stream flow into Seneca Lake, falling several hundred feet in their course.

In the north the soil is largely a gravelly loam, in the southern part a sandy loam, and along the lake and various other places is a silty loam. On the farm of Harpending Brothers, who are among the largest breeders of Berkshire swine in America, are about 400 brood sows.

Products: Oats, wheat, beans, berries, apples, eggs, sheep and dairy and beef cattle.

Average values of farm land range from $75 to $200 per acre.

TORREY: The surface slopes from Seneca Lake to an elevation of 300 feet on the western border. Keuka Lake Outlet flows through a deep, narrow, rocky valley. From Keuka Lake to Seneca Lake the fall is 271 feet.

On the lake shore the soil is clayey, and in the center and west it is a sandy and gravelly loam.

Products: Wheat, oats, beans, apples, grapes, hay and sheep.

Average values of farm land range from $75 to $200 per acre.

MARKETING CONDITIONS

FACILITIES FOR TRANSPORTATION

The New York Central & Hudson River Railroad extends north and south through the eastern part of the county, connecting at Geneva with points east and west, and at Corning with points south. A branch runs from Dresden west to Penn Yan, where it connects with the Northern Central Railway. This road extends from the southeastern part of the county in a northwest direction, connecting with the New York Central at Canandaigua.

A branch of the Lehigh Valley crosses the northwestern part of the county, terminating at Naples in Ontario County and connecting with the main line of the Lehigh and the Auburn branch of the New York Central Railroad at Geneva.

An electric line extends from Penn Yan southwest to Branchport, on Lake Keuka.

A state road extends from Geneva south through the eastern part of the county, passing through Penn Yan. Improved highways also extend from Penn Yan east to Dresden and southwest to the west branch of Lake Keuka. There are in the county 36 miles of improved highways, with 10 miles additional under construction.

AVAILABLE MARKETS

The principal markets within Yates County are Penn Yan, Dresden, Dundee, and Rushville. At Penn Yan are large establishments for the canning of string beans and for the making of grape jelly and grape juice. Penn Yan also boasts of the largest manufacturing plant in the country for grape and fruit baskets, as well as an extensive flouring mill.

A large part of the hay, which is a very important crop, is marketed in New York City; live stock is sent principally to Buffalo; while grapes are marketed not only throughout the state but throughout the whole eastern section of this country.

The milk produced in Yates County is sold principally as market milk and cream or as condensed milk.

Within the county are two canning factories. The agricultural organizations are as follows:

Dundee Fair Association.
Granges: Pomona and 7 subordinate granges.
Starkey Farmers' Co-operative Association, Inc.
Yates County Agricultural Society.

Yates County Farm Bureau Association.
Yates County National Farm Loan Association.
Yates County Sheep Growers' Association.
Yates Poultry Association.

EDUCATIONAL FACILITIES

Schools registered as having suitable facilities for maintaining courses in high school and academic work are located at Middlesex, Penn Yan, and Rushville.

STATUS OF AGRICULTURE IN 1910

(Taken from U. S. Census of 1910)

Land in farms	204,214 acres
Number of farms	2,288
Per cent of farm land improved	81.7

LIVE STOCK PRODUCTS

Milk sold	160,222 gal.
Cream sold	8,922 gal.
Butter fat sold	376,681 lbs.
Butter produced	332,678 lbs.
Cheese produced	385 lbs.
Eggs produced	798,683 doz.
Wool produced	24,188 fleeces

LIVE STOCK AND POULTRY

	Number
Horses	7,270
Cattle	10,303
Sheep	36,554
Swine	7,884
Poultry	125,644

BEES

Number of colonies	2,142

SELECTED CROPS

Cereals:	Acres	Bushels
Corn	8,987	234,613
Oats	19,389	435,232
Wheat	12,090	293,255
Barley	2,009	42,087
Buckwheat	2,737	43,779
Rye	3,179	51,017

	Acres	Yield
Hay and forage	41,817	42,777 tons
Special crops:		
Potatoes	2,667	235,657 bu.
Vegetables, other than potatoes	1,411	....
Dry edible beans	6,042	62,037 bu.
Dry peas	26	321 bu.
Fruits:		
Apples	161,161 trees	238,606 bu.
Peaches and nectarines	48,350 trees	23,809 bu.
Pears	32,549 trees	17,635 bu.
Plums and prunes	19,841 trees	13,702 bu.
Cherries	10,002 trees	4,364 bu.
Quinces	2,754 trees	1,437 bu.
Grapes	5,123,572 vines	36,941,168 lbs.
Small fruits	1,297 acres	966,480 qts.

PRESENT STATUS OF AGRICULTURE

(From Census of 1917 and Census of 1918)

	1917 Number	1918 Number
Farms for which reports were received	1,978	1,942

LIVE STOCK AND POULTRY

	1917 Number	1918 Number
Horses and mules	6,408	6,127
Cattle	9,587	9,425
Sheep	29,619	20,202
Swine	5,967	5,823
Poultry	116,981	104,450

BEES

	1917 Number	1918 Number
Number of colonies	1,600	1,450

SELECTED CROPS

	1917	1918	
Cereals:	Acres	Acres	Bushels
Corn	6,333	6,154	153,238
Oats	12,827	13,833	449,851
Barley	2,245	2,540	59,880
Buckwheat	2,486	2,136	36,184
Wheat (winter)	12,341	13,165	307,504
Wheat (spring)	93	208	4,062
Rye	1,953	3,231	32,430

	1917	1918	
	Acres	Acres	Yield
Hay and forage:			
Alfalfa	2,717	2,171	4,927 tons
Other hay	36,038	32,654	44,003 tons
Corn (ensilage)	572	592	3,619 tons
Corn (fodder)	....	797	....
Special crops:			
Field beans	9,254	9,007	70,442 bu.
Cabbage	367	571	6,505 tons
Potatoes	1,788	1,627	168,842 bu.
Roots raised for stock food	....	251	....
Canning factory crops	238	258	....
Other vegetables and garden crops	302	370	....
Fruits:			
Apples	5,468	5,590	252,279 bu.
Peaches	829	736	9,630 bu.
Pears	353	404	15,735 bu.
Plums	111	155	61,223 lbs.
Cherries	141	136	49,487 lbs.
Quinces	....	18	199 bu.
Vineyard	7,403	7,438	11,579,520 lbs.
Small fruits	863	1,146	....

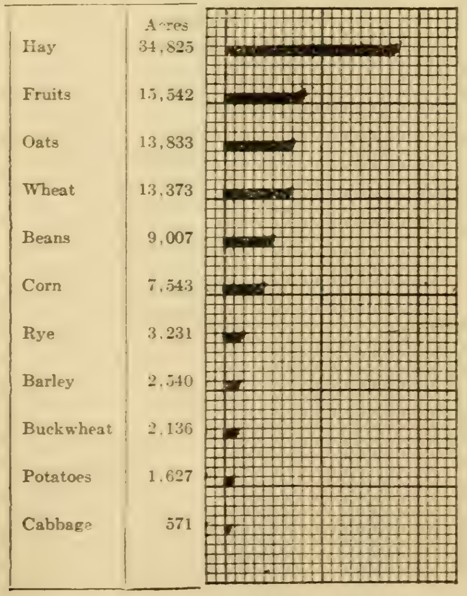


FIG. 177.— CHART SHOWING RELATIVE ACREAGE OF CROPS IN YATES COUNTY

POPULATION OF NEW YORK STATE

(U. S. Census of 1920)

Since the foregoing material was prepared, the preliminary announcement of population has been made for the United States Census of 1920. The population of the various counties is given below:

County	Population	County	Population
Albany	186,106	Oneida	182,485
Allegany	36,842	Onondaga	241,465
Broome	113,610	Ontario	52,652
Cattaraugus	71,323	Orange	119,844
Cayuga	65,221	Orleans	28,619
Chautauqua	115,348	Oswego	71,045
Chemung	65,872	Otsego	46,200
Chenango	34,969	Putnam	10,802
Clinton	43,898	Rensselaer	113,129
Columbia	38,930	Rockland	45,548
Cortland	29,625	St. Lawrence	88,121
Delaware	42,774	Saratoga	60,029
Dutchess	91,747	Schenectady	109,363
Erie	634,588	Schoharie	21,303
Essex	31,871	Schuyler	13,098
Franklin	43,541	Seneca	24,735
Fulton	44,927	Steuben	80,627
Genesee	37,976	Suffolk	110,241
Greene	25,796	Sullivan	33,163
Hamilton	3,970	Tioga	24,212
Herkimer	64,962	Tompkins	35,285
Jefferson	82,250	Ulster	74,979
Lewis	23,704	Warren	31,673
Livingston	36,830	Washington	44,888
Madison	39,535	Wayne	48,827
Monroe	352,034	Westchester	344,086
Montgomery	57,928	Wyoming	30,077
Nassau	125,727	Yates	16,641
New York City	5,621,151		
Niagara	118,705	State	10,384,897

AGRICULTURAL STATISTICS

The statistics in the following pages are taken from the preliminary report of the census of 1920, to which is appended the following statement:

"The figures for domestic animals in 1910 are not very closely comparable with those for 1920, since the present census was taken in January, before the breeding season had begun, while the 1910 census was taken in April, or about the middle of the breeding season, and included many spring calves, colts, etc."

NUMBER OF LIVE STOCK

County	Horses	Cattle	Sheep	Swine
Albany	7,375	17,248	9,789	11,827
Allegany	12,255	53,162	13,974	11,437
Bronx	110	20	......	543
Broome	8,265	45,428	4,616	6,792
Cattaraugus	13,208	81,673	4,481	14,377
Cayuga	14,421	35,736	12,585	19,720
Chautauqua	16,392	73.196	6,198	17,357
Chemung	5,004	17,585	3,423	4,206
Chenango	10,330	70,573	3,752	8,016
Clinton	10,888	44,548	8,043	7,949
Columbia	7,442	21,758	12,869	10,379
Cortland	6,672	38.323	5,161	5,148
Delaware	11,830	112,533	4,249	8,528
Dutchess	9,053	43,076	6,745	14,677
Erie	19,212	58,967	6,436	25,652
Essex	5,125	18,055	14,485	4,188
Franklin	8,882	44.171	3,514	6,028
Fulton	3,640	13,181	825	3,808
Genesee	11,393	25,462	37,489	16,149
Greene	4,986	21,423	7,051	6,396
Hamilton	493	1,625	1,787	595
Herkimer	7,905	49,315	1,460	7,407
Jefferson	16.899	90,853	3,598	15,577
Kings	133	590	......	17
Lewis	8,099	51,607	2,281	9,388
Livingston	12,950	28,515	37,396	13,760
Madison	10,459	53,419	3,122	8,059
Monroe	17.663	29,094	16,062	23,818
Montgomery	6.940	28.427	1.624	6,766

County	Horses	Cattle	Sheep	Swine
Nassau	3,065	2,682	387	2,340
New York	41	39	......	......
Niagara	12,975	19,358	11,915	16,713
Oneida	15,115	83,561	3,808	19,055
Onondaga	16,251	49,835	11,589	19,483
Ontario	14,194	23,493	41.039	21,525
Orange	9,084	55,747	1,668	10,712
Orleans	9,788	16.977	43,877	15,908
Oswego	12,595	53,399	2,908	13,708
Otsego	12,423	76,668	7,018	10,911
Putnam	1,747	11.378	709	1,910
Queens	1,347	2,607	......	829
Rensselaer	7,351	23,301	11,223	8,851
Richmond	315	274	44	597
Rockland	1,180	2,641	206	1,957
St. Lawrence	22,573	142,056	11,418	20,222
Saratoga	7,314	23,009	6,493	8,368
Schenectady	2,820	7.014	1,746	2,659
Schoharie	7,512	37,450	5,821	7,542
Schuyler	4,483	9,369	14,119	4,160
Seneca	6,905	11,383	8,727	10,158
Steuben	17,870	56,463	30,238	15,204
Suffolk	5,870	8,023	1.374	11,637
Sullivan	6,620	33,638	2,651	6,248
Tioga	6,219	26,837	5,693	4,041
Tompkins	7,305	22.390	10,561	6,733
Ulster	8,075	30,763	2,716	12,621
Warren	2,998	8.705	9,193	2,455
Washington	10,040	44,561	20,714	10,014
Wayne	14,229	28,198	13,578	20,840
Westchester	2.815	11.410	1,023	5,758
Wyoming	10,660	40.435	37,042	10,053
Yates	6,368	11.012	26 213	8.784
State	536,171	2,144,244	578,726	600,560

GRAIN — ACREAGE AND YIELD

County	Corn		Oats	
	Acres	Bushels	Acres	Bushels
Albany	5,477	212,182	16,648	366,598
Allegany	1,215	53,615	36,614	668,764
Bronx	4	160	......	....
Broome	1,857	84,384	13,423	337,262
Cattaraugus	2,211	81,405	29,714	652,048
Cayuga	14,186	768,066	24,717	601,254
Chautauqua	6,314	261,443	28,181	651,250
Chemung	2,019	106,750	12,488	223,989

	Corn		Oats	
County	Acres	Bushels	Acres	Bushels
Chenango	1,989	104,194	14,269	455,534
Clinton	2,486	91,621	19,839	408,225
Columbia	12,371	404,709	16,946	359,949
Cortland	1,291	66,939	9,199	232,131
Delaware	1,106	55,209	13,544	405,562
Dutchess	14,792	629,517	10,731	275,625
Erie	10,097	315,865	33,517	561,665
Essex	1,836	67,350	8,546	172,468
Franklin	1,192	37,917	19,460	477.418
Fulton	1,876	72,012	7,641	179,640
Genesee	5,974	266,410	15,044	391,746
Greene	5,492	255,352	7,847	198,377
Hamilton	71	3,532	305	8,474
Herkimer	1,824	96,917	10,848	307,774
Jefferson	2,595	117,691	58,402	1,029,722
Kings	13	540	......	....
Lewis	785	20,251	17,441	468,494
Livingston	5,266	262,134	20,289	460,057
Madison	3,267	186,396	14,335	414,369
Monroe	14,650	682,794	25,565	705,495
Montgomery	4,543	189,064	15,918	403,406
Nassau	3,719	187,873	197	3,927
New York	2	120	......	....
Niagara	11,310	485,968	14,302	329,872
Oneida	4,285	179,999	18,608	526,456
Onondaga	11,972	583,978	22,617	543,179
Ontario	13,417	669,922	22,519	569,397
Orange	10,617	663,904	6,686	169,730
Orleans	6,377	285,781	10,594	268,375
Oswego	6,259	272,136	16,487	309,805
Otsego	3,646	183,920	21,272	594,929
Putnam	1,882	95,575	1,045	24,784
Queens	502	36,910	......	....
Rensselaer	8,538	310,056	15,023	293,497
Richmond	129	3,965	17	340
Rockland	1,456	60,890	655	14,757
St. Lawrence	2,450	87,690	46,114	870,752
Saratoga	8,158	261,525	13,795	304,703
Schenectady	1,709	64,241	6,776	163,743
Schoharie	2,945	145,091	14,371	351,307
Schuyler	2,670	128,293	9,966	188,298
Seneca	7,621	388,255	12,478	338,069
Steuben	6,011	239,883	52,684	1,383,541
Suffolk	14,176	641,569	1,801	51,393
Sullivan	3,632	132,497	6,724	160,722

	Corn		Oats	
County	Acres	Bushels	Acres	Bushels
Tioga	2,845	124,850	15,498	313,031
Tompkins	4,480	164,754	13,700	305,520
Ulster	11,222	336,384	9,949	238,303
Warren	1,510	59,397	2,128	53,274
Washington	12,947	523,468	23,305	495,817
Wayne	16,667	738,767	23,424	533,427
Westchester	2,973	157,222	1,655	44,539
Wyoming	1,448	67,992	20,780	440,007
Yates	5,951	301,908	10,912	352,672
State	320,325	14,109,202	937,553	21,595,461

	Wheat		Barley	
County	Acres	Bushels	Acres	Bushels
Albany	2,839	48,625	477	9,226
Allegany	3,377	48,404	3,871	64,371
Bronx	....	....	......	....
Broome	792	13,251	281	5,728
Cattaraugus	1,731	22,404	982	20,778
Cayuga	27,850	557,302	11,713	260,318
Chautauqua	3,159	47,979	1,423	24,517
Chemung	2,370	45,964	1,067	15,188
Chenango	1,046	17,118	462	11,662
Clinton	2,610	38,814	2,029	34,084
Columbia	1,155	18,834	283	4,053
Cortland	946	19,102	508	11,041
Delaware	361	5,059	127	2,967
Dutchess	4,763	89,347	207	4,008
Erie	20,553	336,053	2,463	29,150
Essex	807	9,821	558	8,678
Franklin	2,316	28,154	1,311	26,251
Fulton	244	3,617	231	4,850
Genesee	35,160	800,511	8,577	167,374
Greene	1,699	26,308	87	1,796
Hamilton	3	38	7	73
Herkimer	859	11,547	751	19,404
Jefferson	5,418	55,209	3,020	43,977
Kings	....	....	......	....
Lewis	547	7,662	566	14,321
Livingston	31,054	708,711	6,585	118,499
Madison	3,469	74,753	2,575	67,531
Monroe	47,085	942,803	5,608	111,261
Montgomery	2,071	36,972	741	15,697
Nassau	361	6,250	......	....
New York	....	....	......	....

	Wheat		Barley	
County	Acres	Bushels	Acres	Bushels
Niagara	33,652	572,880	2,382	36,703
Oneida	3,164	71,673	1,252	34,126
Onondaga	16,382	334,643	6,991	159,759
Ontario	40,341	877,581	10,756	234,264
Orange	3,900	76,640	42	850
Orleans	29,793	562,596	5,260	90,666
Oswego	1,701	23,722	420	6,933
Otsego	1,349	25,501	933	20,881
Putnam	218	3,684	11	135
Queens	....	....	......	....
Rensselaer	709	9,738	363	4,867
Richmond	3	55	......	....
Rockland	224	3,366	5	155
St. Lawrence	3,262	40,060	2,001	37,449
Saratoga	1,108	15,767	221	3,912
Schenectady	551	8,327	232	4,915
Schoharie	1,747	33,240	491	11,436
Schuyler	5,297	107,512	2,402	43,021
Seneca	22,564	449,720	4,295	91,524
Steuben	11,073	208,855	6,683	109,200
Suffolk	3,190	69,978	71	1,631
Sullivan	442	5,875	42	746
Tioga	2,277	42,632	375	6,280
Tompkins	8,911	194,067	2,342	47,659
Ulster	4,670	80,816	143	1,892
Warren	93	1,373	13	178
Washington	1,314	19,114	291	5,646
Wayne	26,335	461,549	4,481	72,568
Westchester	497	9,711	40	876
Wyoming	16,237	388,848	3,379	69,666
Yates	17,812	416,133	3,682	78,270
State	463,461	9,136,268	116,109	2,273,011

	Rye		Buckwheat	
County	Acres	Bushels	Acres	Bushels
Albany	9,722	117,548	8,660	177,320
Allegany	466	7,583	9,450	156,984
Bronx	....	....	......	....
Broome	434	6,380	5,374	83,274
Cattaraugus	140	2,170	7,504	144,317
Cayuga	734	11,534	9,977	198,712
Chautauqua	416	6,322	10,650	220,833
Chemung	2,101	27,806	6,955	107,199

County	Rye		Buckwheat	
	Acres	Bushels	Acres	Bushels
Chenango	79	1,613	2,963	52,848
Clinton	295	2,618	3,382	41,453
Columbia	17,153	202,262	3,849	60,066
Cortland	55	808	2,692	49,732
Delaware	227	3,228	5,443	99,941
Dutchess	4,952	66,288	2,274	39,403
Erie	3,519	44,720	7,793	160,513
Essex	111	908	1,232	15,920
Franklin	420	5,010	1,232	18,489
Fulton	178	1,794	2,203	32,326
Genesee	2,778	49,188	1,555	34,401
Greene	3,646	43,870	3,821	69,817
Hamilton	1	8	26	1,506
Herkimer	41	362	1,265	22,279
Jefferson	89	1,225	2,493	31,173
Kings	....	....	......	....
Lewis	128	959	567	8,410
Livingston	5,265	83,287	2,320	46,852
Madison	167	2,527	2,472	43,240
Monroe	3,795	61,731	1,388	26,939
Montgomery	201	3,072	4,519	95,871
Nassau	311	4,351	34	460
New York	....	....	......	....
Niagara	868	10,212	1,712	31,266
Oneida	282	3,695	2,045	30,593
Onondaga	632	9,267	3,231	59,637
Ontario	2,422	36,349	2,532	60,375
Orange	2,390	37,057	742	11,539
Orleans	461	5,398	1,120	24,233
Oswego	659	7,287	4,030	66,990
Otsego	197	3,275	6,815	113,129
Putnam	260	3,306	164	2,195
Queens	8	180	......	....
Rensselaer	11,230	133,533	2,886	54,587
Richmond	10	176	......	....
Rockland	443	5,081	142	1,673
St. Lawrence	209	2,288	1,790	26,417
Saratoga	5,259	57,193	5,274	83,555
Schenectady	2,533	26,909	2,960	66,353
Schoharie	1,964	29,656	9,466	186,060
Schuyler	1,932	27,476	4,625	71,310
Seneca	777	11,172	4,108	98,659
Steuben	4,552	56,616	15,877	241,929
Suffolk	1,713	25,039	125	2,029
Sullivan	1,951	19,525	3,594	53,594
Tioga	813	9,408	8,308	137,995

	Rye		Buckwheat	
County	Acres	Bushels	Acres	Bushels
Tompkins	963	12,392	6,789	120,318
Ulster	4,582	65,179	3,823	56,996
Warren	220	2,017	1,416	22,568
Washington	3,029	36,977	1,862	34,820
Wayne	1,145	16,093	2,823	55,446
Westchester	860	15,863	525	15,066
Wyoming	1,341	22,927	4,477	89,663
Yates	4,532	69,834	2,522	42,208
State	115,661	1,520,552	217,946	3,901,481

HAY

County	Acres	Tons	County	Acres	Tons
Albany	79,070	71,751	Niagara	65,620	82,046
Allegany	140,935	159,843	Oneida	162,604	213,617
Bronx	8	8	Onondaga	143,611	222,326
Broome	103,123	109,044	Ontario	78,392	125,280
Cattaraugus	135,584	195,144	Orange	99,164	108,579
Cayuga	108,007	160,995	Orleans	46,268	74,489
Chautauqua	117,743	191,452	Oswego	102,109	139,917
Chemung	45,765	44,322	Otsego	158,233	183,331
Chenango	140,760	171,536	Putnam	22,261	22,877
Clinton	110,339	128,480	Queens	516	1,006
Columbia	81,233	70,994	Rensselaer	75,912	66,392
Cortland	85,160	109,063	Richmond	823	1,273
Delaware	161,957	218,836	Rockland	5,811	6,368
Dutchess	92,712	95,659	St. Lawrence	269,863	390,661
Erie	132,712	176,477	Saratoga	80,975	73,673
Essex	58,691	63,699	Schenectady	34,213	30,472
Franklin	94,450	117,357	Schoharie	94,526	97,571
Fulton	46,703	43,698	Schuyler	45,207	55,465
Genesee	63,969	99,825	Seneca	56,105	87,328
Greene	62,562	58,229	Steuben	201,154	209,106
Hamilton	5,496	5,171	Suffolk	11,098	16,499
Herkimer	98,301	124,015	Sullivan	64,736	65,767
Jefferson	220,028	275,896	Tioga	63,216	65,157
Kings	......	....	Tompkins	67,805	83,582
Lewis	100,709	133,520	Ulster	63,613	70,058
Livingston	79,693	112,268	Warren	28,999	26,639
Madison	100,633	153,277	Washington	108,198	123,300
Monroe	69,151	111,943	Wayne	64,028	102,701
Montgomery	86,457	102,032	Westchester	18,843	23,853
Nassau	4,452	5,764	Wyoming	82,194	120,565
New York	1	3	Yates	45,019	64,387

VEGETABLES

County	Potatoes		Other vegetables
	Acres	Bushels	Acres
Albany	2,738	165,009	3,550
Allegany	9,039	1,106,813	99
Bronx	18	926	394
Broome	5,005	486,533	516
Cattaraugus	5,067	514,082	531
Cayuga	6,161	573,983	2,774
Chautauqua	5,667	511,088	3,845
Chemung	2,641	286,666	461
Chenango	3,996	474,222	768
Clinton	7,680	874,239	255
Columbia	2,745	168,539	333
Cortland	3,777	485,608	2,045
Delaware	3,891	369,960	191
Dutchess	3,514	202,481	939
Erie	17,259	1,845,311	8,133
Essex	2,530	235,271	239
Franklin	7,545	914,341	137
Fulton	2,007	170,181	150
Genesee	7,990	765,124	2,041
Greene	1,888	120,654	232
Hamilton	236	27,974	55
Herkimer	3,019	293,389	439
Jefferson	2,768	211,685	521
Kings	418	85,421	497
Lewis	2,586	312,485	67
Livingston	7,474	769,841	6,383
Madison	3,465	365,866	5,128
Monroe	15,586	1,396,820	8,636
Montgomery	1,869	117,100	472
Nassau	12,679	1,825,650	10,686
New York	....	....	38
Niagara	4,019	207,953	4,671
Oneida	7,121	819,881	5,436
Onondaga	11,770	1,100,323	5,913
Ontario	9,821	989,313	8,934
Orange	3,526	197,878	4,352
Orleans	3,021	200,701	5,751
Oswego	5,320	428,292	2,564
Otsego	5,606	626,206	469
Putnam	686	30,586	36
Queens	3,027	456,763	6,482
Rensselaer	7,167	517,112	998
Richmond	42	7,517	1,088
Rockland	586	37,203	584
St. Lawrence	5,321	486,680	361
Saratoga	4,215	327,228	907

County	Potatoes		Other vegetables
	Acres	Bushels	Acres
Schenectady	1,004	59,368	564
Schoharie	2,894	249,124	87
Schuyler	1,694	171,915	39
Seneca	1,566	117,011	1,267
Steuben	19,013	2,176,313	1,350
Suffolk	20,565	3,912.263	6,360
Sullivan	2,810	189,402	142
Tioga	3,498	406,300	129
Tompkins	2,930	347,639	500
Ulster	3,878	199,740	1,026
Warren	1,842	127,840	325
Washington	9,291	638,091	299
Wayne	6,679	492,524	8,340
Westchester	1,426	89,783	1,338
Wyoming	7,021	1,017,510	254
Yates	1,786	165,126	921
State	310,403	32,470,847	132,042

FRUITS

County	Apples		Peaches	
	Trees	Bushels	Trees	Bushels
Albany	182,691	226,389	9,612	3,728
Allegany	142,220	51,362	393	127
Bronx	24	....	....	....
Broome	80,837	31,581	1,000	58
Cattaraugus	197,246	87,026	793	73
Cayuga	200,829	233,481	6,949	863
Chautauqua	279,080	177,369	31,143	4,793
Chemung	48,685	19,537	4,188	293
Chenango	75,297	71,766	72	10
Clinton	103,930	142,211	43	13
Columbia	342,837	1,057,550	20,030	14,462
Cortland	57,819	57,904	44	12
Delaware	151,051	182,664	68	17
Dutchess	284,846	985,651	55,392	40,959
Erie	337,408	54,822	12,021	1,139
Essex	57,442	91,026	11	3
Franklin	37,975	34,568	....	....
Fulton	10.987	4,158	37	5
Genesee	240.604	172,298	6,933	1,756
Greene	263,190	492,918	18,316	7,233
Hamilton	1,463	1,938	....	....

	Apples		Peaches	
County	Trees	Bushels	Trees	Bushels
Herkimer	40,728	32,130	27	22
Jefferson	42,932	20,888	....	....
Kings	....	....	....	....
Lewis	14,800	9,285	....	....
Livingston	117,014	45,967	15,222	3,027
Madison	92,289	93,952	112	50
Monroe	681,426	1,233,381	630,558	248,950
Montgomery	42,175	21,851	95	6
Nassau	6,826	9,802	12,401	11,892
New York	....	....	6	20
Niagara	816,508	1,635,867	925,041	348,630
Oneida	123,430	126,528	119	93
Onondaga	163,097	273,107	2,740	447
Ontario	349,333	476,558	44,771	4,563
Orange	143,955	234,495	133,930	65,599
Orleans	657,004	1,702,652	409,467	158,229
Oswego	209,090	175,533	1,768	270
Otsego	139,946	115,511	118	19
Putnam	45,112	103,374	9,479	3,820
Queens	351	81	2,700	883
Rensselaer	101,094	116,403	2,412	852
Richmond	493	331	569	503
Rockland	22,345	50,605	42,869	13,343
St. Lawrence	77,007	59,615	24	14
Saratoga	59,352	54,855	3,488	1,131
Schenectady	29,556	15,759	1,765	1,046
Schoharie	143,302	141,235	3,547	2,595
Schuyler	67,904	52,491	53,423	8,296
Seneca	134,784	159,231	45,439	15,627
Steuben	194,835	113,327	8,409	749
Suffolk	42,610	76,662	52,965	11,455
Sullivan	129,541	51,892	4,434	757
Tioga	52,897	17,616	5,162	228
Tompkins	95,752	56,102	20,984	2,654
Ulster	271,863	702,873	167,380	179,633
Warren	35,631	31,800	....	....
Washington	67,674	96,067	234	216
Wayne	906,938	1,549,730	195,628	71,658
Westchester	73,090	209,735	29,094	24,510
Wyoming	192,205	185,829	3,411	614
Yates	155,345	120,978	41,187	4,535
State	9,636,698	14,350,317	3,038,023	1,262,480

County	Pears		Plums and Prunes	
	Trees	Bushels	Trees	Bushels
Albany	58,781	46,855	23,626	1,929
Allegany	6,545	3,782	7,002	595
Bronx	....	....	....	....
Broome	7,318	4,365	5,547	218
Cattaraugus	5,970	2,870	6,228	357
Cayuga	32,665	21,780	9,517	1,227
Chautauqua	21,987	6,595	19,981	2,534
Chemung	4,388	2,203	3,794	58
Chenango	3,300	2,179	4,080	782
Clinton	1,658	374	1,629	7
Columbia	193,430	224,966	7,958	1,268
Cortland	2,674	1,408	3,674	1,062
Delaware	6,706	3,851	8,596	1,363
Dutchess	41,041	46,527	9,579	2,133
Erie	57,952	20,979	24,278	1,009
Essex	1,217	995	2,913	31
Franklin	105	21	223	41
Fulton	438	45	722	55
Genesee	71,149	30,766	8,664	885
Greene	132,710	109,293	7,760	1,215
Hamilton	....	....	....	....
Herkimer	2,252	975	4,457	803
Jefferson	1,047	452	997	74
Kings	....	....	....	....
Lewis	23	5	160	....
Livingston	12,744	6,288	7,763	545
Madison	3,598	1,733	5,137	1,515
Monroe	314,090	162,342	72,408	16,341
Montgomery	6,593	4,192	8,727	576
Nassau	3,285	3,264	268	111
New York	5	4	....	....
Niagara	520,118	236,718	206,970	133,536
Oneida	7,967	4,106	7,909	838
Onondaga	11,650	8,191	17,623	3,382
Ontario	85,231	48,862	54,986	30,138
Orange	60,389	61,455	6,136	867
Orleans	342,974	208,999	21,580	8,836
Oswego	117,575	71,004	6,501	809
Otsego	7,692	3,920	12,949	2,521
Putnam	2,730	2,581	1,253	389
Queens	184	807	22	3
Rensselaer	31,876	23,757	11,576	317
Richmond	326	258	29	2
Rockland	8,770	6,057	2,597	617
St. Lawrence	232	178	244	4
Saratoga	13,495	10,665	9,801	836

	Pears		Plums and Prunes	
County	Trees	Bushels	Trees	Bushels
Schenectady	4,952	4,303	4,095	129
Schoharie	8,777	7,373	11,975	2,038
Schuyler	7,175	4,007	7,260	247
Seneca	33,300	22,813	14,815	8,896
Steuben	12,771	7,351	13,092	865
Suffolk	9,464	7,957	2,221	413
Sullivan	7,380	5,466	4,353	203
Tioga	4,755	2,447	3,694	128
Tompkins	13,329	9,238	4,842	526
Ulster	187,635	224,758	11,798	3,320
Warren	480	136	1,001	33
Washington	5,005	4,314	5,753	168
Wayne	216,982	97,426	22,241	4,300
Westchester	5,627	7,435	1,726	612
Wyoming	23,571	13,604	7,330	1,138
Yates	32,677	14,942	13,829	1,449
State	2,778,761	1,830,237	745,889	244,294

	Cherries		Grapes	
County	Trees	Bushels	Vines	Pounds
Albany	12,003	697	8,115	90,773
Allegany	5,206	89	23,683	289,178
Bronx	3	....	....	....
Broome	7,945	167	3,369	55,284
Cattaraugus	7,302	184	349,327	2,440,820
Cayuga	8,906	545	14,379	248,014
Chautauqua	74,491	15,553	14,850,162	69,494,334
Chemung	4,458	41	1,983	21,636
Chenango	2,445	203	1,720	13,310
Clinton	1,745	39	957	3,480
Columbia	84,497	15,925	435,665	3,179,551
Cortland	4,004	351	331	5,266
Delaware	5,329	104	1,433	12,711
Dutchess	10,218	4,325	116,979	942,026
Erie	28,005	845	1,869,979	7,519,688
Essex	4,526	24	4,445	24,661
Franklin	299	....	191	3,761
Fulton	536	53	878	8,503
Genesee	8,418	421	7,805	72,991
Greene	6,951	609	6,085	66,901
Hamilton	....	....	12	7
Herkimer	3,294	224	1,254	17,917
Jefferson	1,796	51	767	10,223

County	Cherries		Grapes	
	Trees	Bushels	Vines	Pounds
Kings	....	....	3	....
Lewis	188	....	203	592
Livingston	11,020	408	108,562	387,327
Madison	10,238	877	4,794	45,360
Monroe	122,154	51,387	226,017	1,853,979
Montgomery	6,622	96	9,684	135,086
Nassau	463	108	2.649	14,681
New York	6	8	14	138
Niagara	115,139	12,935	670,048	8,871,585
Oneida	6,980	120	7,514	66,996
Onondaga	38,340	3,171	39.072	284,657
Ontario	50,795	12,047	1,370.815	3,672,920
Orange	10,802	2,253	320,805	2,101,079
Orleans	43,987	3,802	43,037	387,754
Oswego	18,883	1,731	9,740	116,216
Otsego	4,788	115	950	11,218
Putnam	1,556	118	1,147	15,353
Queens	15	21	487	6,705
Rensselaer	10,742	304	11,254	282,507
Richmond	79	6	253	1,406
Rockland	2,411	174	7,594	79,578
St. Lawrence	384	3	505	7,951
Saratoga	6,607	102	6.496	77,210
Schenectady	4,618	761	2,892	31,810
Schoharie	5,965	421	1,915	28,663
Schuyler	9,243	332	844,060	3,346,933
Seneca	24,690	1,249	466,752	3,804,595
Steuben	17,786	318	2,547,715	9,334,825
Suffolk	1,776	261	7,825	72,803
Sullivan	2,169	66	5,719	38,908
Tioga	6,780	237	2,596	41,327
Tompkins	9,272	666	65,137	286,215
Ulster	22,273	7,933	2,108,333	14,673,273
Warren	740	7	587	4,270
Washington	6,804	34	3.619	54,099
Wayne	145,453	22,809	39,239	441,788
Westchester	1,790	439	8.731	116,220
Wyoming	7,275	390	5.570	47,098
Yates	15,993	718	4,025,703	17,218,538
State	1,027,203	166,877	30,677,555	152,482,698

SMALL FRUITS

County	Acres	Quarts	County	Acres	Quarts
Albany	439	534,013	Oneida	390	297,666
Allegany	113	91,275	Onondaga	382	389,821
Bronx	12	30,000	Ontario	950	1,006,359
Broome	175	186,704	Orange	603	1,027,606
Cattaraugus	105	76,861	Orleans	123	113,886
Cayuga	193	231,055	Oswego	658	950,159
Chautauqua	1,050	1,040,823	Otsego	240	179,325
Chemung	105	95,085	Putnam	28	15,851
Chenango	124	80,660	Queens	5	4,854
Clinton	33	24,499	Rensselaer	334	463,623
Columbia	486	752,510	Richmond	16	26,855
Cortland	101	92,548	Rockland	104	123,921
Delaware	136	75,128	St. Lawrence ..	107	97,416
Dutchess	265	395,698	Saratoga	304	383,800
Erie	2,472	3,149,783	Schenectady	520	223,912
Essex	75	54,725	Schoharie	94	100,862
Franklin	90	67,132	Schuyler	321	199,871
Fulton	103	71,840	Seneca	80	65,154
Genesee	55	37,823	Steuben	280	203,540
Greene	132	152,810	Suffolk	428	370,827
Hamilton	2	2,147	Sullivan	70	47,632
Herkimer	190	229,739	Tioga	119	107,105
Jefferson	114	119,646	Tompkins	179	180,027
Kings	3	5	Ulster	2,935	5,164,497
Lewis	52	50,426	Warren	51	59,222
Livingston	153	121,605	Washington	137	100,807
Madison	108	127,414	Wayne	1,588	3,511,232
Monroe	979	1,324,670	Westchester	425	153,686
Montgomery ...	151	111,412	Wyoming	88	67,849
Nassau	84	96,870	Yates	648	503,933
New York	1	1,272			
Niagara	102	146,430	State	20,412	25,713,901

VALUE OF CROPS

	1919	1909
All crops	$417,046,864	$190,002,693
Cereals	82,524,839	43,099,988
Other grains and seeds	4,618,653	3,969,022
Hay and forage	169,494,524	77,373,333
Vegetables	104,070,460	36,309,544
Potatoes	69,812,321	....
Fruits and nuts	51,519,503	24,900,491
Other crops	4,818,885	4,350,315

ACREAGE AND PRODUCTION OF PRINCIPAL CROPS

		1919	1909
Corn	acres	320,325	512,442
	bushels	14,109,202	18,115,634
Wheat	acres	463,461	289,130
	bushels	9,136,268	6,664,121
Oats	acres	937,553	1,302,508
	bushels	21,595,461	34,795,277
Barley	acres	116,109	79,956
	bushels	2,273,011	1,922,868
Rye	acres	115,661	130,540
	bushels	1,520,552	2,010,601
Buckwheat	acres	217,946	286,276
	bushels	3,901,481	5,691,745
Hay and forage	acres	5,502,943	5,043,621
	tons	9,728,317	7,056,980
Hay crops	acres	4,987,520	4,783,592
	tons	6,264,685	5,171,964
Corn cut for forage	acres	177,833	(Not
	tons	255,972	reported)
Other forage crops, including silage	acres	337,590	260,029
	tons	3,207,660	1,885,016
Potatoes	acres	310,403	394,319
	bushels	32,470,847	48,597,701
Apples	trees	9,636,698	11,248,203
	bushels	14,350,317	25,409,324
Pears	trees	2,778,761	2,141,596
	bushels	1,830,237	1,343,089
Grapes	vines	30,677,555	31,802,097
	pounds	152,482,698	253,006,361

INDEX

A

Aeroplanes, where manufactured, 673.
Agriculture, present-day, 66–78.
Agricultural College, State, location of, 728.
Agricultural instruction, opportunities for, 88–90.
Agricultural schools, state, location of, 117, 255, 419, 451, 613, 649.
Albany and Schenectady railroad, when opened, 94.
Albany, city of, 102.
  city charter granted, 59.
  settlement of, 54, 93.
Albany county, 92–106.
  climate and rainfall, 95.
  educational facilities, 103.
  historical associations, 92–94.
  industry, development of, 94, 95.
  location and extent, 92.
  marketing conditions, 101–3.
  milk and milk products, 102.
  population, 92, 822.
  statistics, 103–106.
  topography and natural characteristics, 96.
  townships, description by, 97–100.
Alfalfa, counties leading in yield of, 69–73.
  importance of, in Madison county, 411.
    in Onondaga county, 489.
Alfred University, location of, 117.
Allegany county, 107–20.
  climate and rainfall, 108, 109.
  educational facilities, 117, 118.
  historical associations, 107.
  industry, development of, 108.
  location and extent, 107.
  marketing conditions, 116, 117.
  milk and milk products, 117.
  population, 107, 822.
  statistics, 118–20.
Allegany county — continued
  topography and natural characteristics, 109.
  townships, description by, 110–15.
Allen, Ethan, at Ticonderoga and Crown Point, 288.
Altitudes, table of, 18.
Amsterdam, 442.
Anti-rent difficulties, 93, 218.
Apatite, production of, 82.
Apples, counties leading in yield of, 70–75.
  importance of, in Columbia county, 219.
    in Dutchess county, 260.
    in Orleans county, 532.
Area of New York State, 16.
  at various altitudes, 18.
Articles of Confederation, adoption of, 259.
Ashokan reservoir, 51, 734.
Auburn, city of, 161.
  Theological Seminary, location of, 162.
Ausable Chasm, 51, 208.

B

Barley, counties leading in yield of, 69, 72.
  importance of, in Cayuga county, 152.
    in Ontario county, 503.
Batavia, 325, 331.
Beacon, 268.
Beans, counties leading in yield of, 70, 73.
  importance of, in Livingston county, 400.
    in Wyoming county, 801.
Bees, number of colonies in St. Lawrence county, 602.
Bennington battlefield, 580.
Big Tree, treaty of, 57, 399.
Binghamton, 130.

Blind, State School for, location of, 331.
Blue Mountain Lake, 349.
Bolting Acts, 454.
Brant, General, invasion of Herkimer county by, 355.
  of Orange county, 516.
  of Otsego county, 556.
Bronx county, 121.
Broom corn, early production of, 64, 65.
Broome county, 122–33.
  climate and rainfall, 124.
  educational facilities, 131.
  historical associations, 122, 123.
  industry, development of, 123, 124.
  location and extent, 122.
  marketing conditions, 129–31.
  milk and milk products, 123, 131.
  population, 122, 822.
  statistics, 131–33.
  topography and natural characteristics, 125.
  townships, description by, 125–29.
Brooklyn. *See* Kings county.
Brown, John, home of, 288.
  tract, 383, 384.
Bryant, home of, 446.
Buckwheat, counties leading in yield of, 69, 72.
  importance of, in Cayuga county, 152.
    in Steuben county, 674.
Buffalo, 273, 274, 283.
Burgoyne in Saratoga county, 618.

C

Cabbage, counties leading in yield of, 69, 74.
  importance of, in Ontario county, 504.
    in Suffolk county, 690.
Cabbage seed, where produced extensively, 235.
Calf raising, decrease in, since 1900, 63, 64.
Canal locks at Waterford, height of, 626.
Canals, building of first, 61.
Canandaigua, 502, 503, 511.
Canastota, 418, 419.
Canning crops, counties leading in yield of, 69, 74.
  importance of, in Livingston county, 400.
    in Oneida county, 471.
    in Orleans county, 532.
Canton, 612.
Capital, state, at Albany, 102.
  at Fishkill, 259.
  at Kingston, 733.
  at New York City, 454.
  at Poughkeepsie, 259.
Carding machine, first, where located, 759.
Carthage, 377.
Castle Island, settlement of, 93.
Catharine, Queen. *See* Montour, Catharine.
Catskill mountains, 337, 338.
Cattaraugus county, 134–150.
  climate and rainfall, 137, 138.
  educational facilities, 147.
  historical associations, 134, 135.
  industry, development of, 136, 137.
  location and extent, 134.
  marketing conditions, 145–47.
  milk and milk products, 147.
  population, 134, 822.
  statistics, 147–50.
  topography and natural characteristics, 138.
  townships, description by, 139–45.
Cattaraugus Indian Reservation, location of, 274.
Cattle, counties leading in number of, 71, 77.
  number of, in St. Lawrence county, 602.
Cauliflower, importance of, in Suffolk county, 690.

Cayuga county, 151–65.
  climate and rainfall, 153, 154.
  educational facilities, 162.
  historical associations, 151, 152.
  industry, development of, 152, 153.
  location and extent, 151.
  marketing conditions, 160, 161.
  milk and milk products, 161.
  population, 151, 822.
  statistics, 162–65.
  topography and natural characteristics, 154, 155.
  townships, description by, 155–60.
Cayuga Indians, 53.
Cement, amount produced annually, 82.
Central Islip State Hospital, location of, 694.
Cereals, counties leading in production of, 69, 71–73.
Champlain canal, 61, 205, 759.
Champlain, Samuel, expedition of, 54, 204, 287, 288.
Chateaugay, 311.
Chautauqua assembly, 167, 176, 178.
Chautauqua county, 166–80.
  climate and rainfall, 167, 168.
  educational facilities, 177, 178.
  historical associations, 166, 167.
  industry, development of, 167.
  location and extent, 166.
  marketing conditions, 175–77.
  milk and milk products, 177.
  population, 166, 822.
  statistics, 178–80.
  topography and natural characteristics, 168, 169.
  townships, description by, 169–75.
Cheese factory, first, 471.
Cheese-making, importance of, 62, 63.
  in Herkimer county, 356.
  in Lewis county, 384, 393, 394.
Chemung county, 181–91.
  climate and rainfall, 183.
  educational facilities, 188.
  historical associations, 181, 182.
Chemung county — continued
  industry, development of, 182, 183.
  location and extent, 181.
  marketing conditions, 186–88.
  milk and milk products, 187.
  population, 181, 822.
  statistics, 188–91.
  topography and natural characteristics, 184.
  townships, description by, 184–86.
Chenango county, 192–203.
  climate and rainfall, 193.
  educational facilities, 200.
  historical associations, 192.
  industry, development of, 192, 193.
  location and extent, 192.
  marketing conditions, 199, 200.
  milk and milk products, 200.
  population, 192, 822.
  statistics, 200–203.
  topography and natural characteristics, 194.
  townships, description by, 194–98.
Cherries, counties leading in yield of, 70, 76.
  importance of, in Niagara county, 458.
    in Wayne county, 775.
Cherry Valley during the Revolution, 555, 556.
Cheviot sheep, when introduced, 556.
Christiansen, Hendrick, settlement by, 93.
Chrysler's field, battle of, 600.
Cicero swamp, 24, 491.
Cities, list of, 86, 87.
City charters, first, 59.
Clarkson School of Technology, location of, 612, 613.
Clermont, effect of trip by, on Albany, 94.
Climate of New York State, W. M. Wilson and R. A. Mordoff, 28–50.
  climatic control, 31–39.
  climatic divisions, 33.

Climate of New York State — cont'd
  frosts, 39, 40.
  observations, 28–31.
    rain gauges, 30.
    snowfall measurements, 30, 31.
    thermometers in use, 29, 30.
  precipitation, 40–48.
    annual, 42.
    droughts in New York, 44, 46.
    fall, 44.
    hail, 47.
    records, 40, 41.
    snowfall, 46.
    spring, 42.
    summer, 44.
    sunshine, 49, 50.
    temperature, 34–39.
    thunderstorms, 47.
    tornadoes, 47, 48.
    winds, 48, 49.
    winter, 42.
Climatic control, factors in, 31, 39.
Clinton, Governor George, inauguration of, 733.
Clinton county, 204–16.
  climate and rainfall, 207.
  educational facilities, 214.
  historical associations, 204–6.
  industry, development of, 206, 207.
  location and extent, 204.
  marketing conditions, 212, 213.
  milk and milk products, 213.
  population, 204, 822.
  statistics, 214–16.
  topography and natural characteristics, 207, 208.
  townships, description by, 208–12.
Cobleskill, 648.
Cohoes, 102.
Colgate University, location of, 419.
Columbia county, 217–31.
  climate and rainfall, 220.
  educational facilities, 228.
  historical associations, 217–19.
  industry, development of, 219, 220.
Columbia county — continued
  location and extent, 217.
  marketing conditions, 226–28.
  milk and milk products, 228.
  population, 217, 822.
  statistics, 228–31.
  topography and natural characteristics, 221.
  townships, description by, 221–26.
Commercial facilities, 84–87.
  canals, 84.
  electric roads, 84.
  highways, improved, 84, 85.
  markets within state, 85, 86.
  railroads, 84.
  rivers and lakes, 84.
Compensation lands, 57.
Constitution, federal, adoption of, 259.
Constitution Island, 570.
Cooper, James Fenimore, home of, 562, 788.
Corn, counties leading in yield of, 69, 72.
  importance of, in St. Lawrence county, 602.
  seed, production of, in Suffolk county, 690.
Cornbury, Governor, endeavor of, to lay taxes, 59, 60.
Cornell University, location of, 728.
Corning, 683.
Cortland, city of, 233, 239, 240.
Cortland county, 232–43.
  climate and rainfall, 233, 234.
  educational facilities, 240.
  historical associations, 232, 233.
  industry, development of, 233.
  location and extent, 232.
  marketing conditions, 238–40.
  milk and milk products, 240.
  population, 232, 822.
  statistics, 240–43.
  topography and natural characteristics, 234, 235.
  townships, description by, 235–38.
Cotton, early production of, 64.
Cotton mill, first in state, 471.

Counties first formed, 58, 59, 92.
Craig Colony, location of, 402.
Cralo, Fort, where located, 580.
Cranberries, where produced, 549, 690.
Crane Institute of Music, 612.
Crown Point, fort of. 288.

D

Dairy products, value of, 66.
Dairying, importance of, in Delaware county, 246.
  in Jefferson county, 370.
  in New York State, 62–64. *See also* Milk and milk products under each county.
  in St. Lawrence county, 602, 612.
Delaware county, 244–57.
  climate and rainfall, 246.
  educational facilities, 255.
  historical associations, 244, 245.
  industry, development of, 245, 246.
  location and extent, 244.
  marketing conditions, 253, 254.
  milk and milk products, 254.
  population, 244, 822.
  statistics, 255–57.
  topography and natural characteristics, 246, 247.
  townships, description by, 247–53.
Diatomaceous earth, production of, 82.
Dix Mountain, 295.
Dongan, Governor Thomas, charter granted by, 59.
Droughts in New York, 44, 46.
Drumlins, 22.
Ducks, production of, in Suffolk county, 690.
Dudley Observatory, location of, 102.
Dunkirk, 176.
Dutch governors, New York under, 59.
Dutch settlements, 54, 93, 258. 335, 436, 515, 592, 618, 688, 732.
Dutchess county, 258–71.
  climate and rainfall, 260, 261.
  educational facilities, 269.
  historical associations, 258, 259.
  industry, development of, 260.
  location and extent, 258.
  marketing conditions, 267, 268.
  milk and milk products, 268.
  population, 258, 822.
  statistics, 269–71.
  topography and natural characteristics, 261, 262.
  townships, description by, 262–66.

E

Educational facilities, 88–91. *See also* under each county.
  agricultural instruction, opportunities for, 88–90.
  farm bureau managers, list of, 90, 91.
  schools, number of, 88.
Elmira, 187.
Emery, production of, 82.
Emma Willard School, 588.
Endicott, 130.
English, first settlements by, 688.
English governors, New York under, 59, 60.
Erie canal, effects on completion of, 61.
Erie county, 272–86.
  climate and rainfall, 275.
  educational facilities, 283, 284.
  historical associations, 272–74.
  industry, development of, 274, 275.
  location and extent, 272.
  marketing conditions, 282, 283.
  milk and milk products, 283.
  population, 272, 822.
  statistics, 284–86.
  topography and natural characteristics, 275, 276.
  townships, description by, 276–82.

Essex county, 287–302.
  climate and rainfall, 289, 290.
  educational facilities, 299.
  historical associations, 287, 288.
  industry, development of, 288, 289.
  location and extent, 287.
  marketing conditions, 298, 299.
  milk and milk products, 299.
  population, 287, 822.
  statistics, 299–302.
  topography and natural characteristics, 290, 291.
  townships, description by, 291–97.
Explorations, 54–59.
Extent of state, 16.

F

Farm bureau managers, list of, 90, 91.
Feeble-minded children, state institution for, location of, 497.
Fish, shipments from Suffolk county, 691.
Fishkill, state capitol at, 259.
Five Nations, or Iroquois, 53, 54.
Flag, American, first, 470.
Flax, early production of, 64, 94, 581.
Fordham University, location of, 121.
Forest arboretum, first, where located, 801.
Forest resources, 78, 79.
Forestry, State School of, 498, 606.
Foreword, 13, 14.
Fort Edward, 758.
Fort Orange, settlement of, 54, 93.
Franklin county, 303–14.
  climate and rainfall, 305.
  educational facilities, 311, 312.
  historical associations, 303, 304.
  industry, development of, 304.
  location and extent, 303.
  marketing conditions, 310, 311.
  milk and milk products, 311.
  population, 303, 822.
  statistics, 312–14.
  topography and natural characteristics, 305, 306.
Franklin county — continued
  townships, description by, 306–10.
Franklinville, 146, 147.
French, settlements of, 55, 369, 383, 487, 488, 599, 787.
French and Indian war, activities in Herkimer county, 355.
Frosts, 39, 40.
Fruit, counties leading in production of, 70, 75–77.
  importance of, in Monroe county, 424.
    in Niagara county, 458.
    in Ontario county, 503, 504.
    in Orleans county, 532.
Fruit, raising of, in early years, 64.
Fruit trees. *See* Trees.
Fruits, small, importance of, in Erie county, 274.
  in Ulster county, 734.
Fulton, city of, 551.
  Robert, 94, 218.
Fulton Chain of lakes, 349.
Fulton county, 315–24.
  climate and rainfall, 316, 317.
  educational facilities, 321.
  historical associations, 315.
  industry, development of, 316.
  location and extent, 315.
  marketing conditions, 320, 321.
  milk and milk products, 321.
  population, 315, 822.
  statistics, 321–24.
  topography and natural characteristics, 317, 318.
  townships, description by, 318–20.
Fur farms, 289.
Fur trading, importance of, 273.

G

Garden seeds, where produced, 424.
Garnet, mining of, 82.
Gas, natural, 82.
Gates, General, in Saratoga county, 618.

Genesee country, 56, 57.
Genesee county, 325–34.
  climate and rainfall, 326, 327.
  educational facilities, 332.
  historical associations, 325.
  industry, development of, 326.
  location and extent, 325.
  marketing conditions, 330, 331.
  milk and milk products, 331.
  population, 325, 822.
  statistics, 332–34.
  topography and natural characteristics, 327.
  townships, description by, 327–30.
Genesee turnpike, 410.
Geneva, 502, 510.
Geology and Soil Formation, Edward van Alstyne, 20–27.
  beginning, the, 20, 21.
  glacial period, 21, 22.
  intermediate types of soil, 26.
  lakes, formation of, 22.
  limestone lands, 23, 24.
  muck lands, 24, 25.
  recent changes, 22, 23.
  rural conditions, changes in, 26, 27.
Glacial period, 21, 22.
Glens Falls, 753.
Glove industry, in Fulton county, 316.
Gloversville, 316, 321.
Gneiss, where quarried, 607.
Gold, mining of, 80, 361.
Grant cottage, 619.
Grape industry, growth of, 64.
Grapes, counties leading in yield of, 70, 77.
  importance of, in Chautauqua county, 167, 176.
    in Ulster county, 734.
    in Yates county, 813.
Graphite mining, 82.
Grass river, dredging of, 611.
Great Meadow prison, location of, 763.
Green Lakes, 494.
Greene county, 335–45.
  climate and rainfall, 337.
  educational facilities, 343.
  historical associations, 335, 336.
  industry, development of, 336, 337.
  location and extent, 335.
  marketing conditions, 342.
  milk and milk products, 342.
  population, 335, 822.
  statistics, 343–45.
  topography and natural characteristics, 337, 338.
  townships, description by, 338–42.
Grindstones, sandstone quarried for, 109.
Gypsum, where quarried, 81, 664.

H

Hail, 47.
Hale, Nathan, statue, 121.
Hamilton College, location of, 483.
Hamilton county, 346–53.
  climate and rainfall, 347, 348.
  educational facilities, 351.
  historical associations, 346, 347.
  industry, development of, 347.
  location and extent, 346.
  marketing conditions, 350.
  population, 346, 822.
  statistics, 351–53.
  topography and natural characteristics, 348.
  townships, description by, 349, 350.
Hammondsport, 673.
Hardenburgh Patent, 701.
Hartwick Seminary, location of, 565.
Harum, David, home of, 239.
Hay, counties leading in production of, 69, 73.
  importance of, in Jefferson county, 370.
  in St. Lawrence county, 602.
Helderberg mountains, agriculture on, 96.
Hemp, early production of, 64, 94.
Herkimer, General, at Oriskany, 470.

Herkimer county, 354–67.
  climate and rainfall, 357.
  educational facilities, 365.
  historical associations, 354–56.
  industry, development of, 356, 357.
  location and extent, 354.
  marketing conditions, 363, 364.
  milk and milk products, 364.
  population, 354, 822.
  statistics, 365–67.
  topography and natural characteristics, 357, 358.
  townships, description by, 358–63.
Hicks, Elias, 446.
Highways, improved, 84, 85.
History, early, 53–65. *See also* under each county.
  exploration and settlement, 54–59.
  industry, progress of, 62–65.
    dairying, 62–64.
    fruits and vegetables, 64.
    miscellaneous products, 64, 65.
  struggle for independence, 59, 60.
  transportation, improvements in, 60–62.
Hobart College, location of, 511.
Holland Land Company, office, 135, 325.
  purchase by, 56.
Homer, 239.
Honey, importance of, in Cayuga county, 153.
Hops, production of, 65, 94, 411, 471, 556.
Hornell, 683.
Hudson, 219, 220, 227.
Hudson, Hendrick, 54, 92, 580.
Huguenots, settlement by, 787.

I

Independence, Declaration of, where proclaimed, 787.
  struggle for, 59, 60.
Indian trails, in relation to modern railroads, 62.
Indians, tribes of, 53, 54.
Industry, progress of, 62–65. *See also* under each county.
Introduction, 15, 16.
Iron mining, 80, 206, 207, 211, 291, 294, 295, 296, 297, 361, 601, 776.
Irondequoit section, production of vegetables in, 424.
Iroquois Indians, 53, 54.
Irving, Washington, home of, 788.
Ithaca, 728.

J

Jamestown, 176.
Jay, John, first court of, 733.
  in relation to Declaration of Rights, 60.
Jefferson county, 368–81.
  climate and rainfall, 370, 371.
  educational facilities, 378.
  historical associations, 368, 369.
  industry, development of, 369, 370.
  location and extent, 368.
  marketing conditions, 377, 378.
  milk and milk products, 378.
  population, 368, 822.
  statistics, 378–81.
  topography and natural characteristics, 371, 372.
  townships, description by, 372–77.
Jemison, Mary, 652, 800, 801.
Johnson, John, 315, 436.
  Sir William, 55, 56, 273, 315, 436.
Johnson City, 130.
Johnstown, 316, 321.

K

Karakul sheep, 489.
Kayaderosseras patent, 617, 618.
Kieft, William, as Governor, 59.
Kings county, 382.
Kingston, 732, 733, 741.
Kirkland, Rev. Samuel, 470, 661.

L

Lackawanna, 283.
Lake Champlain, battles on, 205.

- Lake George battlefields, 746.
- Lakes, formation of, 22.
- Lambs, winter, feeding, 326.
- Latitude and longitude of New York State, 16.
- Letchworth Park, 51, 801.
- Lewis county, 383–97.
  - climate and rainfall, 384–386.
  - educational facilities, 394.
  - historical associations, 383, 384.
  - industry, development of, 384.
  - location and extent, 383.
  - marketing conditions, 393, 394.
  - milk and milk products, 393, 394.
  - population, 383, 822.
  - statistics, 394–97.
  - topography, 386, 387.
  - townships, description by, 387–93.
- Liberty pole, erection of, 60.
- Limestone lands, derivation of, 23, 24.
- Limestone quarries, where located, 375, 438, 491, 606, 607, 624, 664, 815.
- Little Falls, 364.
- Little Valley, 146.
- Live stock, counties leading in number of, 71, 77, 78.
- Livingston, Philip, writer of Declaration of Rights, 60.
  - Robert, 60, 218.
- Livingston county, 398–409.
  - climate and rainfall, 400, 401.
  - educational facilities, 406, 407.
  - historical associations, 398, 399.
  - industry, development of, 399, 400.
  - location and extent, 398.
  - marketing conditions, 405, 406.
  - milk and milk products, 406.
  - population, 398, 822.
  - statistics, 407–9.
  - topography and natural characteristics, 401.
  - townships, description by, 402–5.
- Livingston Manor patent, 28.
- Location and extent of state, 16. *See also* under each county.
- Lockport, 464.
- Long Island, British army on, 382.
- Long Lake, 349.
- Lumbering, 347.
- Lyon Mountain, 208.

M

- McCormick, Cyrus, in Brockport, 424.
- McCrea, Jane, 758.
- MacIntyre mountain, 17, 294.
- Macomb purchase, 58, 369, 383, 600.
- Madison county, 410–22.
  - climate and rainfall, 412.
  - educational facilities, 419.
  - historical associations, 410.
  - industry, development of, 411, 412.
  - location and extent, 410.
  - marketing conditions, 417–19.
  - milk and milk products, 419.
  - population, 410, 822.
  - statistics, 419–22.
  - topography and natural characteristics, 413, 414.
  - townships, description by, 414–17.
- Malone, 311.
- Maple products, importance of, in St. Lawrence county, 602.
- Maple sugar, production of, 65.
- Marathon, 239.
- Marble, where quarried, 606, 791, 792, 793.
- Marcy, Mount, altitude of, 17, 290.
- Markets within the state, 85, 86. *See also* under each county.
- Massachusetts, grants of land to, 56, 57.
- Massena, 612.
- Match, first friction, where manufactured, 758.
- Merino sheep, introduction of, 218, 471.
- Middletown, 526, 527.
- Military lands, 57, 58, 488.
- Milk and milk products. *See* under each county.

Mills, importance of, in early times, 62.
Millstones, where made, 83.
Mineral springs, in Essex county, 297.
  in Lewis county, 390, 392.
  in Livingston county, 399.
  in Saratoga county, 625.
Mineral waters, where found, 83.
Minerals and Mining in New York State. D. H. Newland, 80–83.
  apatite, 82.
  cement manufacturing, 82.
  conservation, importance of, 83.
  emery, 82.
  garnet, 82.
  gas, 82.
  granite, 82.
  gypsum, 81.
  iron, 80.
  limestone, 82.
  marble, 82.
  millstones, 83.
  mineral waters, 83.
  oil, 82.
  pyrite, 81.
  quartz, 82.
  salt, 81.
  sand, molding, 82.
  talc, 81.
  zinc, 81.
Minisink patent, 515, 516.
Mint, state, 516, 517.
Mohawk Indians, 53.
Mohegan. *See* Mohican Indians.
Mohican Indians, 53, 244, 580, 786.
Mohonk, Lake, 737.
Monroe county, 423–34.
  climate and rainfall, 425.
  educational facilities, 432.
  historical associations, 423, 424.
  industry, development of, 424, 425.
  location and extent, 423.
  marketing conditions, 430, 431.
  milk and milk products, 431.
  population, 423, 822.
  statistics, 432–34.
Monroe county — continued
  topography and natural characteristics, 425, 426.
  townships, description by, 426–30.
Montezuma marshes, 24, 25, 155.
Montgomery county, 435–45.
  climate and rainfall, 437, 438.
  educational facilities, 442.
  historical associations, 435, 436.
  industry, development of, 436, 437.
  location and extent, 435.
  marketing conditions, 441, 442.
  milk and milk products, 442.
  population, 435, 822.
  statistics, 443–45.
  topography and natural characteristics, 438.
  townships, description by, 439–41.
Montour, Catharine, 652, 672.
Mordoff, R. A., The Climate of New York State, 28–50.
Mormonism, where originated, 773.
Morris, Gouverneur, birthplace of, 12.
  purchase by, 58.
Morris, Robert, purchase of lands by, 56, 57.
Morris reserve, 398.
Morse, Samuel F. B., home of, 259.
Muck lands, 24, 25.
Muskmelons, production of, in Albany county, 95.

N

Napanoch reformatory, location of, 739.
Nassau county, 446–53.
  climate and rainfall, 448.
  educational facilities, 451.
  historical associations, 446.
  industry, development of, 447, 448.
  location and extent, 446.
  marketing conditions, 450.
  population, 446, 822.
  statistics, 451–53.

Nassau county — continued
  topography and natural characteristics, 448.
  townships, description by, 448–50.
Nassau, Fort, settlement of, 93.
Navigation laws, protest of New York against, 60.
New Rochelle, College of, 796.
New York, city charter granted, 59.
New York City, in relation to dairying, 63.
New York county, 454, 455.
New York State Agricultural Experiment Station, 510.
New York University, location of, 121.
Newark Custodial Asylum, location of, 777.
Newburgh, 526.
Newland, D. H., Minerals and Mining in New York State, 80–83.
Newtown apple, where first perfected, 735.
Niagara, importance of fortifications to early settlers, 272.
Niagara county, 456–68.
  climate and rainfall, 459.
  educational facilities, 465.
  historical associations, 456, 457.
  industry, development of, 457–59.
  location and extent, 456.
  marketing conditions, 463, 464.
  milk and milk products, 464.
  population, 456, 822.
  statistics, 465–68.
  topography and natural characteristics, 460, 461.
  townships, description by, 461–63.
Niagara Falls, 51, 460.
  city of, 464.
Niagara grape, where originated, 459.
Niagara peach, where originated, 459.
Niagara University, location of, 465.
Normal schools, state, location of, 177, 214, 240, 283, 406, 432, 551, 565, 613, 741.
North Tonawanda, 464.
Northern New York Utilities Company, location of, 601.
Norwich, 199.
Nursery products. *See* Trees.
Nursery stock, importance of, in Livingston county, 400.

O

Oats, counties leading in yield of, 69, 71.
  importance of, in Jefferson county, 370.
    in Steuben county, 674.
Ogden, Samuel, purchase by, 58.
Ogdensburg, 612.
Oil, where produced, 108, 110, 112, 114, 115, 135, 137, 139, 142.
Oil and gas, value of, produced in New York State, 82.
Olean, 146.
Oneida, city of, 418.
Oneida county, 469–86.
  climate and rainfall, 472.
  educational facilities, 483.
  historical associations, 469, 470.
  industry, development of, 471, 472.
  location and extent, 469.
  marketing conditions, 480–82.
  milk and milk products, 482.
  population, 469, 822.
  statistics, 483–86.
  topography and natural characteristics, 472, 473.
  townships, description by, 474–80.
Oneida Indians, 53.
Oneonta, 565.
Onondaga county, 487–501.
  climate and rainfall, 490.
  educational facilities, 498.
  historical associations, 487, 488.
  industry, development of, 488–90.
  location and extent, 487.
  marketing conditions, 496, 497.
  milk and milk products, 497.
  population, 487, 822.
  statistics, 498–501.

Onondaga county — continued
  topography and natural characteristics, 490, 491.
  townships, description by, 491–96.
Onondaga Indians, 53.
  reservation for, 493, 494.
Ontario county, 502–14.
  climate and rainfall, 504.
  educational facilities, 511.
  historical associations, 502, 503.
  industry, development of, 503, 504.
  location and extent, 502.
  marketing conditions, 509–11.
  milk and milk products, 511.
  population, 502, 822.
  statistics, 511–14.
  topography and natural characteristics, 504, 505.
  townships, description by, 506–9.
Orange, Fort, building of, 93.
Orange county, 515–30.
  climate and rainfall, 518, 519.
  educational facilities, 527.
  historical associations, 515–17.
  industry, development of, 517, 518.
  location and extent, 515.
  marketing conditions, 525–27.
  milk and milk products, 527.
  population, 515, 822.
  statistics, 527–30.
  topography, 519, 520.
  townships, description by, 520–25.
Oriskany, effect of victory at, 470.
Orleans county, 531–41.
  climate and rainfall, 533.
  educational facilities, 538.
  historical associations, 531, 532.
  industry, development of, 532, 533.
  location and extent, 531.
  marketing conditions, 537, 538.
  milk and milk products, 538.
  population, 531, 822.
  statistics, 538–41.
  topography, 533, 534.
Orleans county — continued
  townships, description by, 534–37.
Oswego, importance of, in colonial times, 543.
  in modern times, 550, 551.
Oswego county, 542–54.
  climate and rainfall, 544.
  educational facilities, 551.
  historical associations, 542, 543.
  industry, development of, 543, 544.
  location and extent, 542.
  marketing conditions, 550, 551.
  milk and milk products, 551.
  population, 542, 822.
  statistics, 551–54.
  topography and natural characteristics, 544, 545.
  townships, description by, 545–50.
Otsego county, 555–68.
  climate and rainfall, 557.
  educational facilities, 565, 566.
  historical associations, 555, 556.
  industry, development of, 556, 557.
  location and extent, 555.
  marketing conditions, 564, 565.
  milk and milk products, 565.
  population, 555, 822.
  statistics, 566–68.
  topography and natural characteristics, 557, 558.
  townships, description by, 558–63.
Oxford, 199.
Oyster Bay, 446.
Oysters, production of, 690, 691.

P

Palatines, settlements by, 55, 218, 259, 354, 355, 435, 436, 640, 641, 733.
Palisades, 51.
Panther mountain, 294.
Paper manufacturing, in Lewis county, 387, 388, 390, 393.
  in St. Lawrence county, 602.

Parish, David, 58.
Patriot war activities, in Clinton county, 205.
  in Niagara county, 457.
  in St. Lawrence county, 600.
Patroon settlement, 54, 93, 579, 580.
Peaches, counties leading in yield of, 70, 75.
  importance of, in Niagara county, 458.
    in Orleans county, 532.
Pears, counties leading in yield of, 70, 76.
  importance of, in Monroe county, 424.
    in Niagara county, 458.
Peat, derivation of, 24.
  where found, 210.
Penn Yan, 812, 818.
Peppermint oil, former production of, 65, 774.
Phelps and Gorham, purchase by, 56, 398, 423.
Philipse Manor Hall, 788.
Philipse patent, 569.
Philipsburg Manor, 787, 788.
Plattsburgh, city of, 213.
  during war of 1812, 205.
Plums, counties leading in yield of, 70, 76.
  importance of, in Monroe county, 424.
    in Orleans county, 532.
Pomeroy English walnut, where originated, 459.
Pontiac, outbreak of Indians under, 273.
Population, 822. *See also* under each county.
  increase of, previous to Revolution, 58.
Potato, American Giant, where originated, 760.
  Hebron Beauty, where originated, 760.
Potato starch, manufacture of, 64.
Potatoes, counties leading in yield of, 69, 74.
Potatoes — continued
  importance of, in Monroe county, 424.
    in Suffolk county, 690.
  seed, where grown extensively, 212, 233, 289.
Potsdam, 612.
Poughkeepsie, city of, 268.
  State capitol at, 259.
Poultry, counties leading in number of, 71, 78.
  importance of, in Erie county, 274.
Powdered milk, first manufacture of, by Ekenberg process, 240.
  introduction of, 63.
Precipitation, 40, 48.
  annual, 42.
  fall, 44.
  spring, 42.
  summer, 44.
  winter, 42.
Preemption line, 57.
Products, agricultural, rank of New York State in, 66.
Provincial Congress in New York city, 60.
Pulpwood industry, in Clinton county, 206.
  in St. Lawrence county, 602.
Putnam county, 569–76.
  climate and rainfall, 571.
  educational facilities, 574.
  historical associations, 569, 570.
  industry, development of, 570.
  location and extent, 569.
  marketing conditions, 573, 574.
  population, 569, 822.
  statistics, 574–76.
  topography and natural characteristics, 571.
  townships, description by, 572, 573.

Q

Quakers, efforts of, in behalf of Indians, 134, 135.
  settlements by, 503, 787.
Quarrying, 82.

Quartz, production of, 82.
Queens county, 577, 578.
Quinces, counties leading in yield of, 70, 76.
  importance of, in Niagara county, 458.

R

Railroads, first, 61, 619, 633.
  number and mileage, 84, 85.
Rain gauges, 30.
Rainfall, amount of, 40–48. *See also* under each county.
Raquette Lake, 349.
Raquette river, power furnished by, 603.
Ray Brook sanitarium, 295.
Reaping machine, where first constructed, 424.
Reforestation, extent of, 79.
Reformatory for Women, State, location of, 790.
Rensselaer, city of, 587.
Rensselaer county, 579–90.
  climate and rainfall, 581.
  educational facilities, 588.
  historical associations, 579, 580.
  industry, development of, 581.
  location and extent, 579.
  marketing conditions, 586, 587.
  milk and milk products, 581, 587.
  population, 579, 822.
  statistics, 588–90.
  topography and natural characteristics, 582.
  townships, description by, 582–86.
Rensselaer Polytechnic Institute, 587, 588.
Rensselaerwyck, settlement of, 93, 579.
Rent difficulties, 93, 218, 580.
Richmond county, 591.
River systems, 18.
Roads, building of first, 61.
Rochester, 431.
Rockland county, 592–98.
  climate and rainfall, 593.
Rockland county — continued
  educational facilities, 596.
  historical associations, 592.
  industry, development of, 592, 593.
  location and extent, 592.
  marketing conditions, 595.
  population, 592, 822.
  statistics, 596–98.
  topography and natural characteristics, 593.
  townships, description by, 594, 595.
Rome, 481, 482.
Round Lake, 349.
Russell Sage College, location of, 588.
Rye, counties leading in yield of, 69, 72.
  importance of, in Albany county, 94.
    in Columbia county, 220.
    in Rensselaer county, 581.

S

St. Bonaventure's College, location of, 147.
St. Lawrence county, 599–616.
  climate and rainfall, 602, 603.
  educational facilities, 613.
  historical associations, 599, 600.
  industry, development of, 600–602.
  location and extent, 599.
  marketing conditions, 611, 612.
  milk and milk products, 612.
  population, 599, 822.
  statistics, 613–16.
  topography and natural characteristics, 603, 604.
  townships, description by, 604–10.
St. Lawrence University, location of, 613.
St. Regis Indian Reservation, location of, 303, 307.
St. Stephens College, location of, 269.
Salamanca, 146.
Salt, production of, 81, 653, 802.
  rock, where mined, 400.

- Salt Springs, Onondaga, 487, 488, 491.
- Sand, molding, where produced, 82.
- Sandstone, where quarried, for building, 534, 610.
  - for grindstones, 109.
- Santanoni mountain, 294.
- Saranac High Falls, 208, 212.
- Saranac Lake village, 304, 311.
- Saratoga county, 617–31.
  - climate and rainfall, 620.
  - educational facilities, 628.
  - historical associations, 617–19.
  - industry, development of, 619, 620.
  - location and extent, 617.
  - marketing conditions, 626, 627.
  - milk and milk products, 619, 627.
  - population, 617, 822.
  - statistics, 628–31.
  - topography and natural characteristics, 620, 621.
  - townships, description by, 621–26.
- Saratoga Springs Reservation, 619.
- Schenectady, city of, 636.
- Schenectady county, 632-39.
  - climate and rainfall, 633.
  - educational facilities, 636.
  - historical associations, 632. 633.
  - industry, development of, 633.
  - location and extent, 632.
  - marketing conditions, 635, 636.
  - milk and milk products, 633, 636.
  - population, 632, 822.
  - statistics, 636–39.
  - topography and natural characteristics, 633, 634.
  - townships, description by, 634, 635.
- Scenic interest, points of, 51, 52.
- Schoharie county, 640–51.
  - climate and rainfall, 642.
  - educational facilities, 648.
  - historical associations, 640, 641.
  - industry, development of, 641, 642.
- Schoharie county — continued
  - location and extent, 640.
  - marketing conditions, 647, 648.
  - milk and milk products, 648.
  - population, 640, 822.
  - statistics, 649–51.
  - topography and natural characteristics, 642, 643.
  - townships, description by, 643–47.
- Schools, number of, 88.
- Schuyler, Fort. *See* Stanwix, Fort.
- Schuyler, General, home of, 94.
  - in Saratoga county, 618.
- Schuyler county, 652–60.
  - climate and rainfall, 653.
  - educational facilities, 657.
  - historical associations, 652.
  - industry, development of, 653.
  - location and extent. 652.
  - marketing conditions, 656. 657.
  - milk and milk products, 657.
  - population, 652, 822.
  - statistics, 657–60.
  - topography and natural characteristics, 654.
  - townships, description by, 654–56.
- Seneca county, 661–71.
  - climate and rainfall, 663.
  - educational facilities, 668.
  - historical associations, 661.
  - industry, development of, 662.
  - location and extent, 661.
  - marketing conditions, 667, 668.
  - milk and milk products, 668.
  - population, 661, 822.
  - statistics, 668–71.
  - topography and natural characteristics, 663, 664.
  - townships, description by, 664–67.
- Seneca Falls, 668.
- Seneca Indians, 53, 398, 502, 661.
- Settlement of New York, 54–59.
- Settlements, first Dutch, 54, 93.
  - first English, 688.
- Seward mountain, 305, 308.
- Seymour, Mount, 308.

Shakers, settlement by, 218.

Sheep, counties leading in number of, 71, 78.
  importance of, in Livingston county, 399.
    in Ontario county, 503.
    in Orleans county, 533.
    in Washington county, 759.

Sheldon pear, where originated, 774.

Ship building, where carried on, 337, 691, 695, 734, 741.

Silver Lake, 803, 804.

Skidmore School of Arts, location of, 628.

Slate, where quarried, 761, 763, 765.

Sloughter, Governor, Henry, 59.

Smith, Joseph, 503, 773.

Smith College, location of, 511.

Snowfall, 46. *See also* under each county.

Snowfall measurements, 30, 31.

Soldiers' and Sailors' Home, location of, 676.

Spiritualism, where originated, 774.

Stamp act, New York, in relation to, 60.

Stanwix, Fort, 244, 245, 470.

State College for Teachers, location of, 103.

State Homeopathic Hospital, location of, 527.

State Library School, location of, 103.

State School of Agriculture and Domestic Science, location of, 255.

Staten Island. *See* Richmond county.

State's hundred, 57, 58.

Statistics, agricultural, of 1910, 66, 67.
    of 1917, 1918, 67, 68, 71–78.
    of 1920, 823–26.
  general, 85.
  See also under each county.

Steamboats, importance of, to Clinton county, 205.

Steuben county, 672–87.
  climate and rainfall, 674.
  educational facilities, 684.
  historical associations, 672, 673.

Steuben county — continued
  industry, development of, 673, 674.
  location and extent, 672.
  marketing conditions, 682, 683
  milk and milk products, 683.
  population, 672, 822.
  statistics, 684–87.
  topography and natural characteristics, 675.
  townships, description by, 675–82.

Stony Point during Revolution, 592.

Strawberry apple, where originated, 411.

Stuyvesant, Peter, as Governor, 59.

Suffolk county, 688–99.
  climate and rainfall, 691.
  educational facilities, 697.
  historical associations, 688, 689.
  industry, development of, 689–91.
  location and extent, 688.
  marketing conditions, 695, 696.
  milk and milk products, 690.
  population, 688, 822.
  statistics, 697–99.
  topography and natural characteristics, 692.
  townships, description by, 692–95.

Sullivan county, 700–10.
  climate and rainfall, 702.
  educational facilities, 707.
  historical associations, 700, 701.
  industry, development of, 701, 702.
  location and extent, 700.
  marketing conditions, 705, 706.
  milk and milk products, 706.
  population, 700, 822.
  statistics, 707–10.
  topography and natural characteristics, 702, 703.
  townships, description by, 703–5.

Sullivan's campaign, 56.
  effect of, 122, 123.

Sunshine, 49, 50.

Swine, counties leading in number of, 71, 78.

Swine — continued
  importance of, in Monroe county, 425.
    in St. Lawrence county, 602.
Swine raising, decrease in, since 1900, 63, 64.
Syracuse, 497.
Syracuse University, 497, 498.

T

Talc, production of, 81, 388, 601, 606.
Taughannock Falls, 724.
Taxation, New York first to protest against, 59, 60.
Teasels, production of, 65, 489.
Temperature, distribution of, 34–39.
Thermometers used in observations, 29, 30.
Thomas Indian School, location of, 274.
Thunderstorms, 47.
Ticonderoga, Fort, capture of, 288.
Tioga county, 711–20.
  climate and rainfall, 712.
  educational facilities, 717.
  historical associations, 711.
  industry, development of, 711, 712.
  location and extent, 711.
  marketing conditions, 715, 716.
  milk and milk products, 712, 716.
  population, 711, 822.
  statistics, 717–20.
  topography and natural characteristics, 712, 713.
  townships, description by, 713–15.
Tobacco, production of, 64, 65.
  in Cayuga county, 153.
  in Chemung county, 183.
  in Onondaga county, 489.
Tompkins county, 721–31.
  climate and rainfall, 723, 724.
  educational facilities, 728.
  historical associations, 721, 722.
  industry, development of, 722, 723.
  location and extent, 721.
Tompkins county — continued
  marketing conditions, 727, 728.
  milk and milk products, 728.
  population, 721, 822.
  statistics, 729–31.
  topography and natural characteristics, 724.
  townships, description by, 725–27.
Tonawanda, city of, 283.
Tonawanda Indian Reservation, location of, 274, 328, 457.
Topography, 17–19. *See also* under each county.
Tornadoes, 47, 48.
Totten and Crossfield purchase, 346.
Trading posts, first, 54, 93, 454, 732.
Transportation, early methods of, 60, 61.
  present facilities, 84, 85.
Trees, fruit, where grown, 167, 400, 425, 510, 646, 662, 668.
  ornamental, where grown, 425, 447, 774.
Troy, 580, 581, 587.
Trudeau, Dr. Edward, 296, 304.
Tryon county, 435.
Tug Hill, 17, 387.
Tuscarora Indian Reservation, location of, 457.

U

Ulster county, 732–44.
  climate and rainfall, 734.
  educational facilities, 741.
  historical associations, 732–34.
  location and extent, 732.
  marketing conditions, 740, 741.
  milk and milk products, 741.
  population, 732, 822.
  statistics, 742–44.
  topography and natural characteristics, 734, 735.
  townships, description by, 735–39.
Union College, location of, 636.
United States Military Academy, 516.
United States Military Post, 213.
United States Navy Yard, 382.
Utica, 482.

V

Van Alstyne, Edward, Geology and Soil Formation, 20–27.
Van Buren, Martin, birthplace of, 217.
Van Rensselaer, Killian, grant to, 93.
Vassar College, location of, 268, 269.
Vegetables, counties leading in production of, 69, 70, 74, 75.
  production of, in Erie county, 274, 275.
    in Monroe county, 424.
    in Orange county, 518.
    in Suffolk county, 690.
    in Wayne county, 774.
Violets, production of, 65, 260.

W

Walloon settlements, 54, 786, 787.
Warren county, 745–56.
  climate and rainfall, 747, 748.
  educational facilities, 753.
  historical associations, 745, 746.
  industry, development of, 746, 747.
  location and extent, 745.
  marketing conditions, 752, 753.
  milk and milk products, 753.
  population, 745, 822.
  statistics, 753–56.
  topography and natural characteristics, 748, 749.
  townships, description by, 749–52.
Washington, George, inauguration of, in New York city, 454.
Washington county, 757–72.
  climate and rainfall, 760.
  educational facilities, 769.
  historical associations, 757–59.
  industry, development of, 759, 760.
  location and extent, 757.
  marketing conditions, 767, 768.
  milk and milk products, 768.
  population, 757, 822.
  statistics, 769–72.
Washington county — continued
  topography and natural characteristics, 761.
  townships, description by, 761–66.
Water boundary, 19.
Water supply, protection of, by forests, 79.
Waterford, height of canal locks at, 626.
Watertown, 377.
Watervliet, 102.
Watkins Glen, 51, 654, 655.
Wayne, General, at Stony Point, 592.
Wayne county, 773–85.
  climate and rainfall, 775.
  educational facilities, 782.
  historical associations, 773, 774.
  industry, development of, 774, 775.
  location and extent, 773.
  marketing conditions, 780–82.
  milk and milk products, 782.
  population, 773, 822.
  statistics, 782–85.
  topography and natural characteristics, 776.
  townships, description by, 777–80.
Webster-Ashburton treaty, 204.
Wells College, location of, 162.
West Point during Revolution, 516.
Westchester county, 786–99.
  climate and rainfall, 789.
  educational facilities, 796.
  historical associations, 786–88.
  industry, development of, 788, 789.
  location and extent, 786.
  marketing conditions, 795, 796.
  population, 786, 822.
  statistics, 796–99.
  topography and natural characteristics, 789, 790.
  townships, description by, 790–95.
Western House of Refuge for Women, location of, 538.

Wheat, counties leading in yield of, 69, 71.
  importance of, in Livingston county, 399.
    in Monroe county, 424.
White Plains during the Revolution, 787.
Whiteface mountain, 297.
Wilkinson, Jemima, 812, 813.
Willard State Hospital, where located, 665.
Williamson, Charles, 503, 673.
Willows, production of, 65, 489.
Wilmington Notch, 297.
Wilson, W. M., The Climate of New York State, 28–50.
Winds, 48, 49.
  night, of Cayuga Lake valley, 48.
Woolen factory, first in state, 471.
Woolen manufacturing, early, 689.
Wyoming county, 800–811.
  climate and rainfall, 802.
  educational facilities, 808.
  historical associations, 800, 801.
  industry, development of, 801, 802.
  location and extent, 800.
  marketing conditions, 807, 808.
Wyoming county — continued
  milk and milk products, 802, 808.
  population, 800, 822.
  statistics, 808–11.
  topography and natural characteristics, 803.
  townships, description by, 803–7.

Y

Yankee Doodle, where written, 580.
Yates county, 812–21.
  climate and rainfall, 813, 814.
  educational facilities, 819.
  historical associations, 812, 813.
  industry, development of, 813.
  location and extent, 812.
  marketing conditions, 818.
  population 812, 822.
  statistics, 819–21.
  topography and natural characteristics, 814, 815.
  townships, description by, 815–17.

Z

Zinc mining, 81, 361, 601, 606.

New York Botanical Garden Library
3 5185 00296 0878